JULY 1, 1960
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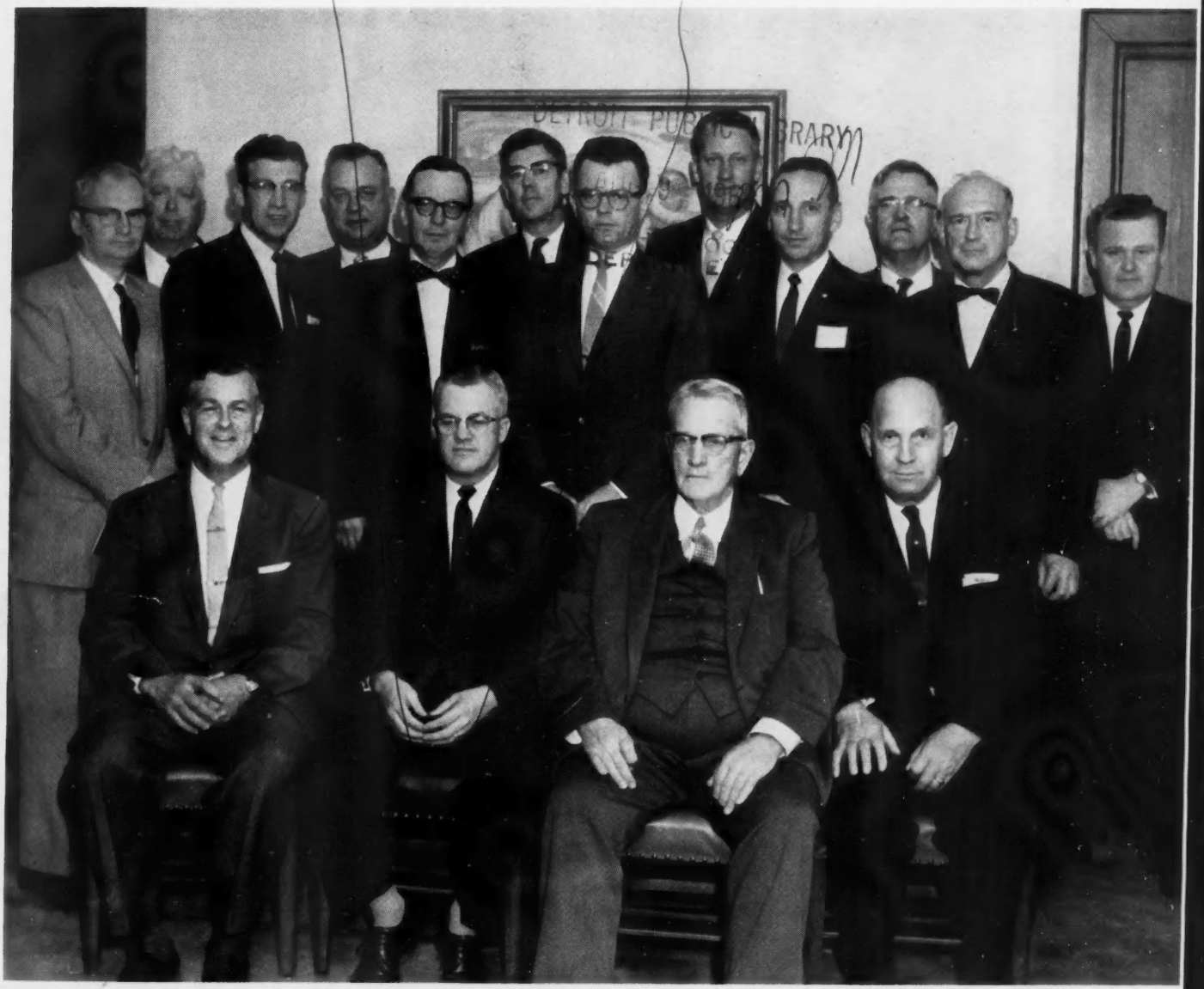
TELEPHONE ENGINEER & MANAGEMENT

the telephone industry magazine

Vol. 64 #13



DEALING WITH THE LOCAL PRESS, by Allan Stacey

Not According To "Spec," by L. A. Gritten

MODERN CABLE CONSTRUCTION, by John S. REED

The Traffic Engineer and Statistics, by D. A. Perigo

Let our "Revenue Men"

TAKE THE KINKS OUT OF YOUR KNOTTY DIRECTORY PROBLEMS!

Take a man like
Joe Mirabella...

Joe is one of our "revenue men" in St. Paul, Minnesota.

Young, energetic, he is representative of the "revenue men" who help telephone companies increase their revenue from directory sales.

Joe started work at the General Telephone Directory Company as a sales representative in Muskegon, Michigan, in 1954. In 1958, he was promoted to sales supervisor of the Owosso unit. In 1959, he was transferred to his present post in St. Paul.

He and his wife and three daughters now live in Minnesota. Always interested in community affairs, Joe has held the positions of Post Commander, District Vice-Commander and State Housing Chairman of the American Legion. He has also devoted his time and efforts to the VFW, Community Chest and Red Cross.

Joe is typical of the "revenue men" who work for General Telephone Directory Company—and for you. Men who are an asset to any community in which they live.

Our Directory "Revenue Men" provide the Independent Telephone Industry with a flexible and highly skilled telephone directory organization. These men—working out of 35 strategic locations—are experienced specialists, trained to give you *complete* and *quality directory service.*

They act as telephone company representatives in their day-to-day contacts with your customers, not only selling and supervising the sale of Yellow Pages advertising—but also acting as public relations representatives for you in their dealings with the public.

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San Angelo, Tex. • San Francisco, Calif. • Spokane, Wash. • Tampa, Fla.

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If no answer, hang up—coins will return
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tAE colored paystations

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For complete information about AE paystations, ask for our Paystation Catalog. Write: Automatic Electric Sales Corporation, Northlake, Illinois. Or call Fillmore 5-7111. In Canada: Automatic Electric Sales (Canada) Ltd., 185 Bartley Drive, Toronto 16, Ontario.

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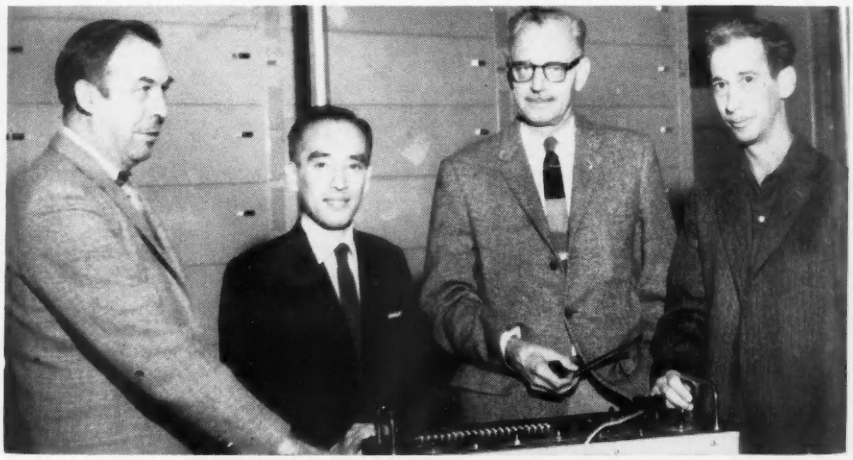
INDUSTRY VIEWS

Secretary of Commerce FREDERICK H. MUELLER (left) receives the first of the new seals of the National Defense Executive Reserve unit of the Business and Defense Services Administration from BDSA Administrator WILLIAM A. WHITE, SR. The seal, which reproduces the obverse side of the Great Seal of the United States, was created to identify the unit which is now composed of more than 1,300 business and technical executives from all parts of the country who would staff the operation of a Government production agency under emergency conditions. It will be displayed wherever the Reserve is represented.

PAT BADOWSKI of West Chicago, an Illinois Bell Telephone Co. operator, is ready to "plug in" the four millionth telephone installed by the company recently. The phone, installed "somewhere" in Illinois Bell territory, gives the phone company something the Russians don't have. There are only 3,700,000 phones in the entire Soviet Union.



Equipment at the Wood County Telephone Co., Wisconsin Rapids, Wis., attracts the interest of KOTARO TANAKA (second from left), an engineer with Nippon Telephone & Telegraph Co., Japan. Tanaka recently spent more than a week with his hosts (from left), BERNARD SMITH, auditor; H. B. FLOWER, general manager; and RICHARD SMART, plant engineer, learning operations of the company which might be employed to advantage by his own firm. The Wood County Telephone Co. utilizes a crossbar switching system — 5,000 lines — engineered, manufactured and installed by Kellogg Switchboard & Supply Co.

Sales staff of Leich Sales Corp. in Chicago attended annual sales meeting at the Wagon Wheel Motel in Rockton, Ill. W. G. McDougall and H. W. Skidmore, district managers, were co-chairmen and presided over the meeting. D. C. Gibson, president, set the keynote of the meeting by emphasizing the methods Leich will use in 1960 to serve the Independent telephone industry more efficiently. Experts from each of Leich's departments presented their plans for 1960. These included presentations on Leich PABX's, PBX's, community dial telephone systems, Leich 100 Telephones and the Leich Line Concentrator. Financing plans for Leich CAX equipment were explained thoroughly. The Motor Vehicle Dept. gave the details of its new tire, tube & battery program for Independent telephone companies. Also discussed was Leich's supply service.

INDUSTRY NEWSLETTER

New Presidents For Four General Companies

Changes in four presidencies of operating telephone companies in the *General Telephone System* became effective Friday, July 1. In the Eastern states, *Clifton E. McCormick* became pres. of *General Telephone Co. of Pennsylvania*, York (Pa.) Telephone & Telegraph Co., and the New Wilmington (Pa.) Telephone Co., succeeding *Lewis F. Shepherd*, who retired. *Marshall K. Taylor*, formerly director of personnel of the *General Telephone & Electronics Service Corp.*, succeeds McCormick as pres. of *General Telephone Co. of Upstate New York*, *General Telephone Co. of Vermont*, *Tri-State Associated Telephone Corp.*, and the *Delaware Valley Telephone Co.*

T. Holden Moran, pres. of the *General Telephone Co. of Wisconsin*, became chairman of the board of that company, succeeding *Walter Dakin*. Moran was replaced by *Harold A. Hahlbeck*, formerly Eastern area general manager for the *General Telephone Co. of Calif.*

Harry J. Huether, Jr., pres. of the *General Telephone Co. of Kentucky*, became chairman of the board of that company, and was succeeded by *Frederick C. Rahdert*, who was vice pres.-operations of the *General Telephone Co. of Pennsylvania.*

Mid-Continent Tel. Co. Formed In Ohio

A new corporation, *Mid-Continent Telephone Corp.*, with authorized 2,000,000 shares of common stock, has been incorporated under laws of state of Ohio. It is anticipated one of major purposes of new holding company will be acquisition of stock and other securities of operating telephone companies. Headquarters will be at Elyria.

Officers of Mid-Continent are: *Welden W. Case*, pres.; *Robert J. McNulty*, treas.; and *George C. McConnaughey, Jr.*, sec. Case is also president of *The Western Reserve Telephone Co.*, Hudson, Ohio and *The Elyria (Ohio) Telephone Co.* McNulty is comptroller and assistant treasurer of the Elyria firm. McConnaughey is a practicing attorney with the law firm of *McConnaughey, McConnaughey & Stradley*, Columbus.

Directors of Mid-Continent Telephone Corp., in addition to Case, are *R. J. Fitch*, pres. of *Elyria (Ohio) Savings & Trust Co.*; *George C. McConnaughey, Sr.*, a practicing attorney of the law firm of *McConnaughey, McConnaughey & Stradley*, Columbus, and former chairman of the Federal Communications Commission; and *Harold N. Wilson*, vice pres. of *The Ohio Co.*, an investment banking firm of Columbus.

GT&E Proposes To Purchase Control of Orange County Tel.

General Telephone & Electronics Corp. has contracted to purchase controlling interest in *Orange County Telephone Co.*, Middletown, N. Y., as a preliminary step toward ultimate acquisition of that company's operations, it was announced last month by Donald C. Power, GT&E chairman and chief executive officer.

Orange County Telephone Co., with headquarters in Middletown, N. Y., serves more than 17,000 telephones in nine exchanges in Middletown and vicinity, covering an area of 250 square miles. The facilities are 100 per cent dial-operated, and are regarded as among the most modern in the telephone industry. The company's operating territory is adjacent to General Telephone exchanges in Port Jervis, N. Y., and vicinity.

It is presently contemplated that subject to New York Public Service Commission approval, the operations of the Orange County company would

INDUSTRY NEWSLETTER

(Concluded from page 9)

ultimately become a part of General Telephone Co. of Upstate New York, Inc. Meanwhile, the Orange County company would continue to operate as at present. Messrs. Chappell and Fancher would retire from active management but would continue on the board of directors.

S.W. Bell Seeks FCC Approval of Suburban Tel. Co. Purchase

Southwestern Bell Telephone Co. has filed application with the FCC for approval of its proposed acquisition of the plant and facilities of the Suburban Telephone Co., Inc., located in and around Tonganoxie and Basehor, Kans. Southwestern stated that an inventory and appraisal by its engineers found the Suburban structural value to be $419,187, and that this is to be the purchase price. The Suburban company offers dial telephone service to 402 subscribers in its Basehor exchange, and to 772 subscribers in its Tonganoxie exchange. The Southwestern application noted that Kansas City is the principal place of work for residents of the Basehor exchange, and that these persons have close social and business ties with the metropolitan community.

FCC Starts Long Range Study of Space Communications Requirements

A limited reopening of the FCC's over-all microwave policy case, specifically to bring the record up to date "so far as may be practicable" on "frequency requirements for space communications," has been ordered by the Commission.

The FCC called for written statements on eight listed issues by Friday, July 8, and said it would not extend the time set. It provided for oral presentation on Monday, July 18, before the full FCC, by witnesses selected by the Commission to give 15-minute summaries of their statements or to answer cross-examination by the FCC members and staff.

At the same time, the agency entered into a long-range study of space communications requirements, aimed toward the October, 1962, meeting of the IRCC (international radio consultative committee), and the possible 1963 extraordinary administrative radio conference of the International Telecommunications Union on space questions.

In its action on petitions to reconsider its over-all microwave policy decision of last summer, which threw open the doors for virtually unrestricted licensing of private point-to-point systems in frequency areas above 890 megacycles, the FCC made no mention of points raised in the petitions other than the space communications question.

There was no reference by the FCC to the common carrier organizations' points about adverse economic impact on common carriers or their customers, or impairment of the carriers' ability to serve the public.

The FCC order said the Commission had under consideration "the requests of (AT&T) and the General Telephone Service Corp., filed in connection with their petitions for reconsideration and rehearing in this matter, that the Commission reopen the record for the purpose of obtaining information as to the frequency needs for space communications." There was no specific indication in the order that the reconsideration petitions of the Western Union Telegraph Co. and the U. S. Independent Telephone Association, or the non-space aspects of the AT&T and General Telephone petitions, were considered. But the FCC said its action is "without prejudice" to future rulings on the pending petitions.

Supplies! When you need them most

"MOON": Hello, Ed. Glad to hear your voice! We were afraid that hurricane might have you folks in real trouble.

ED: Well, we're in trouble, believe me, right up to our cross-arms, Moon.

"MOON": Sorry to hear it, Ed. What can we do to help?

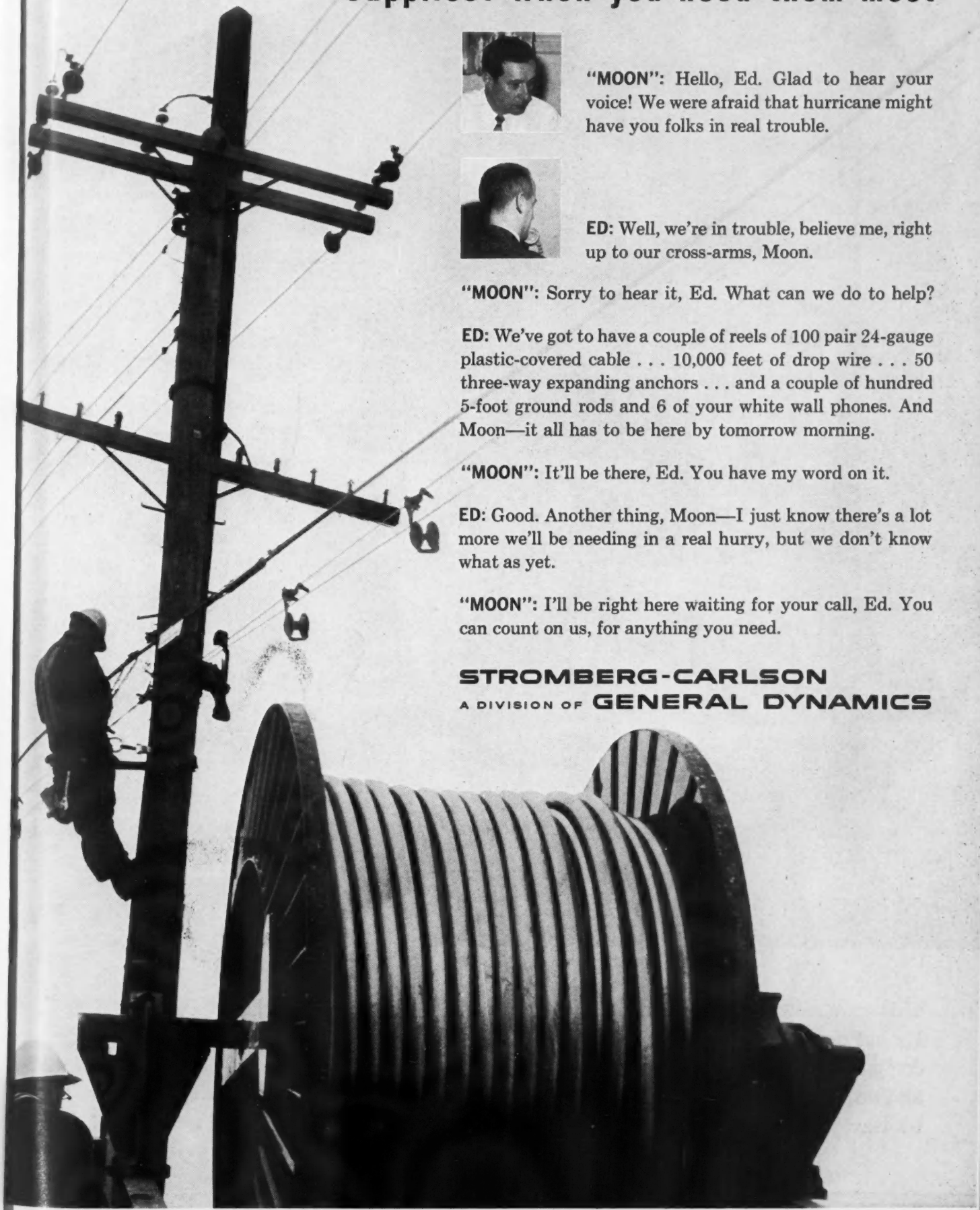
ED: We've got to have a couple of reels of 100 pair 24-gauge plastic-covered cable . . . 10,000 feet of drop wire . . . 50 three-way expanding anchors . . . and a couple of hundred 5-foot ground rods and 6 of your white wall phones. And Moon—it all has to be here by tomorrow morning.

"MOON": It'll be there, Ed. You have my word on it.

ED: Good. Another thing, Moon—I just know there's a lot more we'll be needing in a real hurry, but we don't know what as yet.

"MOON": I'll be right here waiting for your call, Ed. You can count on us, for anything you need.

STROMBERG-CARLSON
A DIVISION OF **GENERAL DYNAMICS**



ATLANTA: TRINITY 5-7467; CHICAGO: STATE 2-4235; KANSAS CITY: HARRISON 1-6618; ROCHESTER: HUBBARD 2-2200; SAN FRANCISCO: OXFORD 7-3630.

REMEMBER

THIS

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He's doing something else—maybe he's putting up another one. Anyway, he did this job all alone in less than five minutes—by himself.
STRANDVISE is made for strand sizes 7/16", 1/4", 5/16", 3/8", and 7/16" NO MATTER THE GRADE. Please pick your size, fill in the coupon and mail it today.
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Mr. Reliable:
WE DON'T BELIEVE IT BUT—we want to give STRANDVISE a fair trial. You may send 4 of them size ( ) without charge. Better send your instructions for installing and a catalog-price sheet, too.
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Company
Street No.
City State
This STRANDVISE guy was put up complete before any tensioning tools were applied to the strand

We found the missing Guy..

Here he is,
doing another job
with Strandvise...

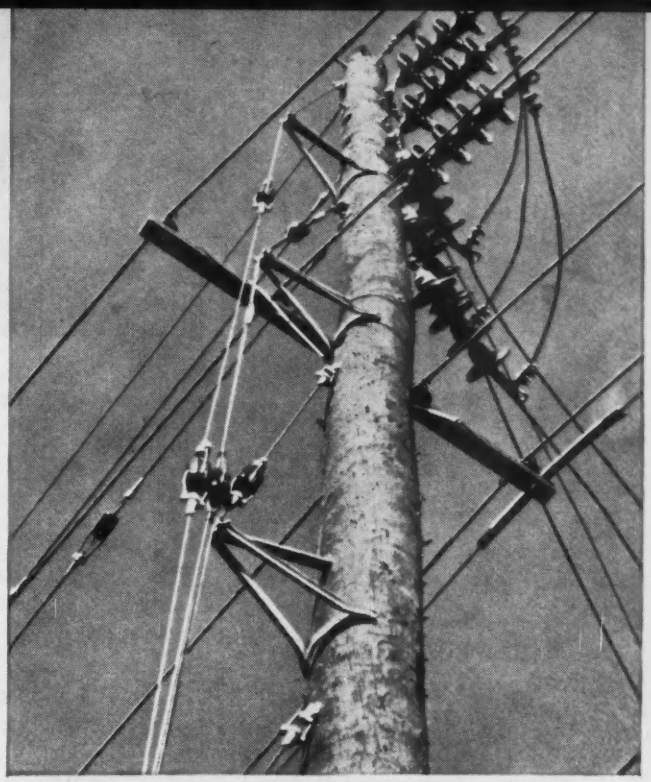
in 5 short minutes and
all by himself!

This man knows the safest, fastest, easiest way. He has deadended his guy at all points. It is complete, but slack. NOW he applies tension . . . and NOT UNTIL NOW. Tools have never been in his way.

Head-guys and

down-guys

the Strandvise way



The fourteen Strandvises on these lines saved someone three to four $MH (man-hours).

take so little time, so little work . . . save you time-dollars!

More and more utilities are using Strandvise . . . the feed-through deadend that lets *one man* put up a guy in five short minutes. No tensioning tools are used until the guy is complete . . . just as easy for double or triple guys.

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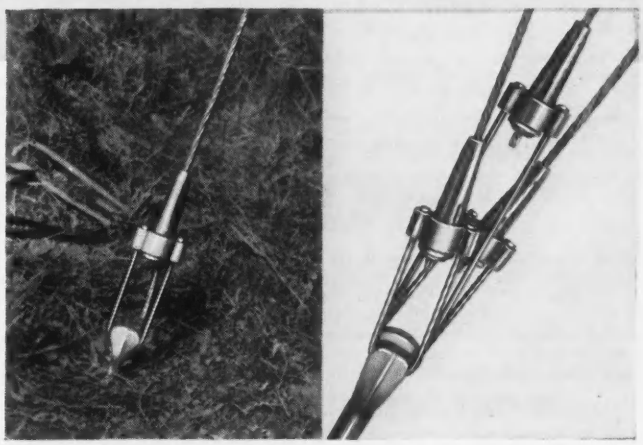

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ELECTRIC COMPANY

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FAST CUTTING
DEPENDABLE
HEAVY DUTY

Designed and manufactured with utility line clearing in mind. Rugged, heavy duty tools that are famous for their fast, easy cutting action.

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No. 11
A strong, durable, easy cutting pruner head that cuts up to 1" branches with ease. Open stock spruce extension poles in 6 foot sections, with telescoping aluminum joints.

No. 12
Cuts up to 1½" branches. Pruner head is malleable iron casting, husky, unbreakable. Smooth, easy cutting action.

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Heavy duty, fast, easy cutting loppers designed for utility use.

No. 75
Compound lever cutting action, smoothly slices through 1¾" to 2" branches.

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The famous "Tiffany" pattern lopping shears 25" and 30" models. Cut branches up to 1¾".

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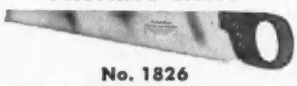

No. 1826
26" blade of Sandvik Swedish steel especially designed for tree work. For those spots where a chain saw can't operate.

Send for literature and additional information on pruning tools of all types.

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"Off The Board"

Communications Securities

Markets as of June 14, 1960	DIVIDEND	BID	ASKED	LAST SALE
American Tel. & Tel.	3.30			89⅞
Anglo-Canadian Tel. (Brit. Col. & Dom. Rep.)	1.20	40¼	42¾	
Bell Tel. of Canada	2.20			45⅞
British Columbia Tel.	2.20	45½	48	
Calif. Interstate Tel. (Calif., Nev.)	.70	12¼	13¼	
Calif. Pac. Util. (Calif., Ore., Nev.)	.90	19½	20¼	
Calif. Water & Tel.	1.28	29	30½	
Carolina Tel. & Tel.	1.60	38½	40½	
Central Elec. & Gas Co.	1.20	25½	27	
Central Telephone Co. (Minn., Ia., N.C., —subsidiaries in Wis., Ill., Va.)	.88	21½	23	
Chenango & Unadilla Tel. (N. Y.)	1.20	26	29	
Cincinnati & Suburban Tel.	4.50	90	93½	
Citizens Utilities (Calif., Pa.) "A"	stk. only	16	17½	
Citizens Utilities (Calif., Pa.) "B"	.52½	16	17½	
Commonwealth Tel. Co. (Pa.)	.90	20½	22½	
Florida Telephone Co.	1.00	28	29½	
General Telephone & Electronics	.76			31½
Hawaiian Telephone Co.	1.00	21⅝	23⅝	
Indiana Telephone Co.	.50	23	27	
Inter-County Tel. & Tel. (Fla.)	.72+stk.	26½	28½	
Inter-Mountain Tel. (Va. & Tenn.)	.80	15½	16½	
Jamestown Telephone (N. Y.)	5.60	80	—	
Lincoln Tel. & Tel. (Neb.)	2.60	64	—	
Lorain Tel. Co. (Ohio)	1.40	33	—	
Middle States Tel. Co. (Ill.)	.80	19	21½	
Mountain States Tel. (Ariz., Colo., Mont., Tex., etc.)	6.60			196
New England Tel. & Tel.	1.72			34½
North Carolina Tel.	none	1 5/16	1 1/16	
Northern Ohio Tel.	1.60	54	57	
Pacific Tel. & Tel.	1.14			27¾
Peoples Telephone (Pa.)	4.00	93	—	
Pioneer Tel. Co. (Minn., N. D.)	1.00+stk.	35	37½	
Rochester Telephone (N. Y.)	1.00			24⅞
Southeastern Tel. (Fla.)	1.00	22	24	
Southern New England Tel.	2.20	45½	48	
Southern Nevada Tel.	1.00	24	26½	
Southwestern States Tel. (La., Ark., Okla., Tex.)	1.20	23⅞	25¼	
Telephone Serv. Co. of Ohio "A"	2.80	190	—	
Telephone Serv. Co. of Ohio "B"	2.80	192	—	
Tidewater Telephone Co. (Va.)	1.40	25	—	
United Utilities	1.40	40¼	42¼	
West Coast Tel. (Wash., Ore., Calif.)	1.28	25⅛	26⅝	
Western Union Telegraph	1.40			49⅜
Western Utilities	.36	7⅞	8⅝	
Western Light & Tel. (Mo., Ia., Kans.)	2.00	44	47	

(Source of market — DEAN WITTER & CO.)

INDUSTRY OBSERVATIONS

By L. A. GRITTEN

"Hear Ye, Hear Ye"

OUR INDUSTRY has done marvellously well with one brainchild of Alexander Graham Bell. Superlatives are trite in praise of the telephone achievement.

It is less realized that Bell's primary interest was not the telephone as a medium of speech for normal people, but aid to the deaf. Bell's mother was deaf. He married a deaf woman. He applied the $10,000 Volta prize, received from France for the invention of the telephone, to a laboratory where he invented phonographic devices to benefit the deaf; and the royalties on his inventions went to endow "the increase and diffusion of knowledge relating to the deaf."

In the same category, but far more numerous than the totally deaf, are the "hard of hearing." It is estimated that there are well over four million hard of hearing people in the U.S.A.; and that only about one quarter of them wear hearing aids. Some partly deaf people still shun hearing aids for the same sort of reason that people once avoided eyeglasses, regardless of their need for them; but probably the main deterrent is cost.

Hearing aids are too expensive. For the price of an average hearing aid one may buy a good television set that is mechanically and electronically far more complex. By and large, the users of hearing aids believe themselves to be unfairly exploited.

Anything to do with the electrical reception of speech is logically a function of an operating telephone company. Help to the hard of hearing is a service increasingly needed and increasingly important, thanks to the tempo of modern industry and the concussions of modern wars. We suggest that the telephone companies should enter the hearing aid field. It would be a valuable, profitable and vitally needed public service.

Inventions Wanted

THE U. S. ARMED Forces are in need of inventive brains, so they have appealed to civilians. They have prepared a list (issued through the National Inventors Council, U. S. Department of Commerce) of some 60 badly needed systems and devices.

They include: ". . . a way to compress the present 300-3500 cycle-per-second speech spectrum into a band-width not over 150 cycles-per-second. After frequency compression, the speech must be indistinguishable from the original."

Escape From Machines

FOR THIRTY happy minutes we stepped out of the world of machinery and automation. We talked with George Pocock and we gloated over something that, without benefit of gasoline, electricity, calculus or computers, remains supremely the best of its kind. It was an eight-oared "shell" in Pocock's workshop at the University of Washington in Seattle.

Four generations of Pococks have made racing rowing boats, in England, and since 1911 in this country. They and another family of boat-builders, the Sims of London, have built most of the finer racing rowing boats that have been used anywhere in the world.

An eight-oared "shell" is a thing of beauty and a triumph of handicraft. It is about 61 feet long. Its greatest width is little more than enough to hold the biggest man, usually No. 5, counting from the bow. Its hull is of ⅛ inch cedar and its decking is of oiled silk or a similar plastic material. Pocock or Sims will build a shell to fit the crew, as your tailor cuts a suit to your measure. They are given the weight, height, length of reach and position in the boat of each man. Without any mathematical calculation, guided only by experience and the father-to-son lore they learned as soon as they could toddle, they make a boat that fits like a glove and runs like a startled hare.

Professional designers, mathematicians and engineers have made many scientific attempts to do a better job; but their reams of calculus have never resulted in anything as fast as Pocock or Sims can put out by rule of thumb.

The men that race in them? Getting bigger all the time, says George Pocock. "We used to think a 14-stone (196 pounds) six-footer was big. Now I'm getting them up to 230 pounds and six feet six tall."

The Pattern of Ability

EVERY personnel man should read the address made by Moorhead Wright at the McGraw-Hill sales meeting in Atlantic City a few weeks ago. It is particularly recommended to those imbued with the modern idea that a human being, after certain scientific — or quasi-scientific? — tests, can be categoried, placed in his proper niche and relied upon to perform according to a

Management Development or Employe Training plan.

Mr. Wright tilts vigorously against lists of Promising Young Men who receive favored cultivation and special opportunities; and against "preoccupation with degrees." He says: "In World War II, of the top five per cent in intellect of the soldiers tested, half of them had never seen the inside of a college." He found that of 300 successful managers who were interviewed, 90.3 per cent had achieved their greatest development when they were "working for so-and-so in so-and-so," that is for some particular man in some particular job. So, he concludes, 90 per cent of the development of a man ". . . is due to the sensitive reciprocal relationship that exists between him and his immediate manager, and there lies the solution to the development problem."

Plan for Blackmail

USITA and A T & T have united in support of House Bill #11320. This base attack on our liberty seeks to make it a federal crime to feed slugs into coin boxes. We warn them, this un-American attempt to deprive our people of their free long distance service is foredoomed to failure. There are too many other devices for achieving the "free men, free speech" ideal.

For example, many decades ago in Winnipeg there was a store with a pay station booth for the customers and a private telephone in the manager's office. The telephone people noticed that long distance calls were seldom made in the office; but many calls were placed from the booth, with nothing much in the coin box to cover them.

A detective discovered that the owner was using a pocket-size device consisting of three coiled springs and a little mallet. They were tuned respectively to sound like the 25¢, 10¢ and 5¢ signals in the coin box.

There are other methods. Some day we intend to write a pamphlet entitled: "Fifty Ways to the Fifth Freedom." It will never be published, but we expect to live in luxury on what Mother Bell and the larger Independents will pay us not to publish it.

"We'll Never Conquer Space"

THAT IS the title of a fascinating article by Arthur C. Clarke, in the June *Science Digest*. After all the forecasts and scientifiction about telephony in space, it is rather a shock to learn, from this distinguished source, that "it will never be possible to converse with anyone on another planet." Dr. Clarke points out that, although within twenty years you may listen to a friend on Mars, the words he speaks will leave his mouth at least three minutes before you hear them, and vice versa; so "an exchange of verbal messages is possible, but not a conversation." Even the 2½ second lag to the moon, he says, will be annoying.

However, everything has its compensations. When you make a business trip to Mars, the lil woman won't be able to call you up and recite a list of groceries you must buy on your way home.

Aid To Self-Help

MANY kind people give to the blind, but few are brave enough to employ them in ordinary jobs. Following a suggestion by Controller Ross Anderson, West Coast Telephone Company has hired a blind woman as a manual DDD call identification operator. General Traffic Superintendent D. A. Perigo found that, with special equipment and a brief period of training, the blind student performed as well as operators with normal vision.

This is heartening, in a cynical world. As aid to the blind, it is far more valuable than charity and the conventional sympathies; and, strangely enough, it may prove, in terms of the most cold-blooded analysis, to be good business. — *L. A. Gritten.*

"CHARLIE," by Jim Counts

YOUNG MAN, I WANT TO PAY MY TELEPHONE BILL.
SORRY, MA'AM ... BUT YOU'LL HAVE TO PAY YOUR BILL AT THE BUSINESS OFFICE
OH! I THOUGHT THIS WAS ONE OF THOSE PICK-UP STATIONS... LIKE THE LAUNDRY HAS!
PAY STATION
Jim Counts

—WASHINGTON OBSERVATIONS—

By ROLAND DAVIES and FRED HENCK

Army Signal Corps Opposes Service Plans of Alaska Company

Private industry telephony is having a difficult time getting off the ground in the new state of Alaska, at least beyond the confines of local exchange service, a series of applications, letters, and comments filed with the Federal Communications Commission has made clear.

In what may be a surprise to some quarters, at least part of the difficulty stems from the fact that the Alaska Public Service Commission, which now exists at least on paper, does not currently have any authority over communications and other utility companies. This may be forthcoming at the 1961 session of the state legislature.

The current situation stems from a group of applications filed with the FCC by the *Trans-Alaska Telephone Co.*, an Anchorage company headed by *John E. Field*, which are said to contemplate ultimately an "integrated local exchange-long distance telephone network on the Kenai Peninsula."

Signal Corps Claims Proposal Duplicates Gov't. Facilities

Trans-Alaska's applications have been, and are being, opposed by the Army Signal Corps' Alaska Communication System, which has contended that the proposal "would duplicate, as to its long-distance and inter-office features, the government facilities which have long served the area." ACS, which would be sold to private enterprise under long-pending legislation which so far has gone nowhere at all on Capitol Hill, argue that this duplication "would reduce the value of the substantial investment" of the government in ACS, since Trans-Alaska, "operator of the local exchange facilities in the area would be in a position to use its facilities for all long lines traffic to the exclusion of the government lines."

However, Trans-Alaska, in a lengthy statement by President John E. Field at the request of *Telecommunications Reports*, Washington correspondents for *Telephone Engineer & Management*, has declared that the company is not asking for approval of a toll telephone network, but rather "the right to put in control circuits and supervisory networks" for nine present telephone exchanges.

"We applied for the right to put in control circuits and supervisory networks into these exchanges, leaving the questions of the use of the system for toll up to the Alaska Public Service Commission, which will probably be in operation next year," Field declared. "Despite our sworn statements and willingness to accept a grant that we agree would not include toll circuits, the FCC and the ACS still persist in treating our application as though we were asking for a full-fledged competing toll network."

ACS, the Alaska telephone company official declared, owns only some open wire lines and the so-called "bush" radio circuits, high frequency radio networks operated into many small communities. Most of the rest of ACS circuits are derived free of charge from the White Alice network, built principally for military purposes, he commented. ACS "simply derives a few channels" from the White Alice system "free of charge and then turns around and sells them back to the civilian population," Field contended.

"Quite obviously," he continued, "the Defense Department, who originally built the White Alice network and who now uses 90% of its facilities, could continue to own and operate the microwave system and could very easily lease a few channels for civilian communications to a private company . . . The truth of the matter is the facilities that are owned by (ACS) constitute a value of less than $3,000,000."

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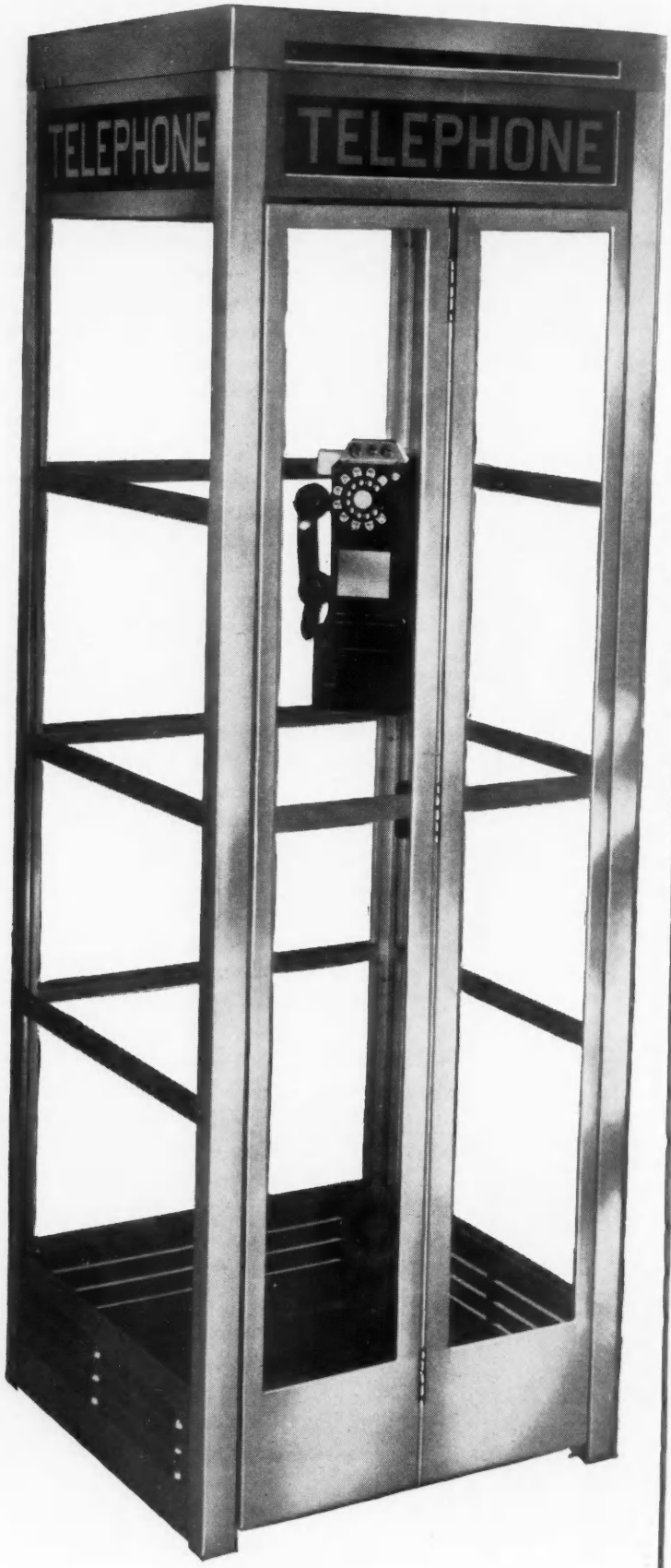

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Its flush roof lets the Alcoa "Compact" booth stack closer in tandem where traffic dictates to earn more revenue per square foot of floor space than any booth made before. Designed to harmonize with modern decor, the Alcoa "Compact" booth attracts passers-by with its clean appearance and slim lines. Ceiling vent fan and louvered bottom panel are optional.

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ALCOA ALUMINUM

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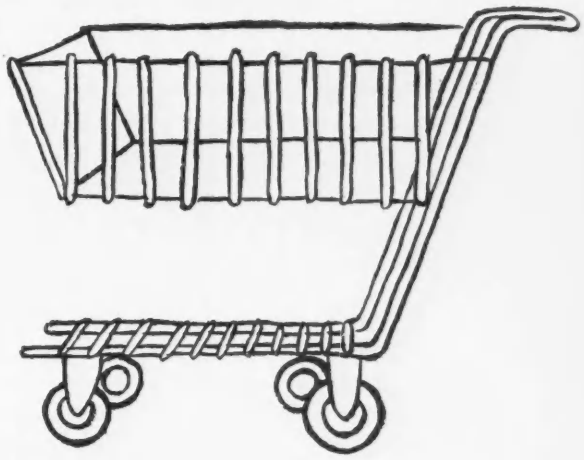
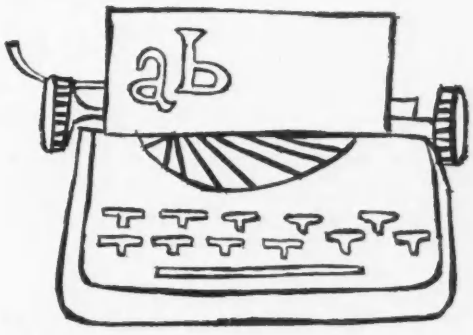
Alcoa "Compact" telephone booth goes where revenue is high:

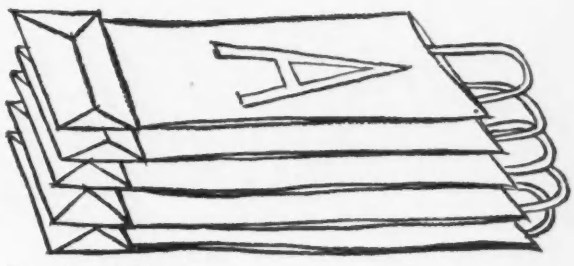


Supermarkets

Drugstores



Office Buildings



Department Stores

WASHINGTON OBSERVATIONS

(Concluded from page 17)

No Action On Legislation Providing For Sale of ACS Facilities

Meanwhile, the legislation providing for the sale of government-owned communications facilities in Alaska is stymied at least until the next Congress. The House Armed Services Committee has held no hearing on the proposal, and shows no sign of scheduling any, until probably some time next year.

Latest comments to be filed with the House group on the legislation have come from the FCC. The Commission, however, took no position on whether it is desirable to sell the government-owned long lines facilities in Alaska to private industry, and said it does not wish any responsibility as to the adequacy of the purchase price under any disposal.

In other parts of its statement, the Commission dealt with suggestions filed earlier by the Bell System regarding the proposed legislation.

The FCC said the "most significant" of these is a revision in the proposed bill which would eliminate the requirement that the Attorney General advise the Secretary of Defense as to whether a transfer proposed to be made by the Defense Department would create a situation inconsistent with the anti-trust laws.

The *American Telephone & Telegraph Co.* suggested that there be substituted a requirement that before consummation of a transfer, a certification must first be obtained from the FCC that the transfer will be of advantage to the persons to whom service is to be rendered and in the public interest, and that the certification would have the same force and effect as those now issued in telephone acquisition cases.

In its comments, the FCC took no position on the merits of the AT&T recommendation, but did point out that its knowledge of the Alaska facilities is limited, and that it does not know how much of an investigation would have to be carried out prior to any certification.

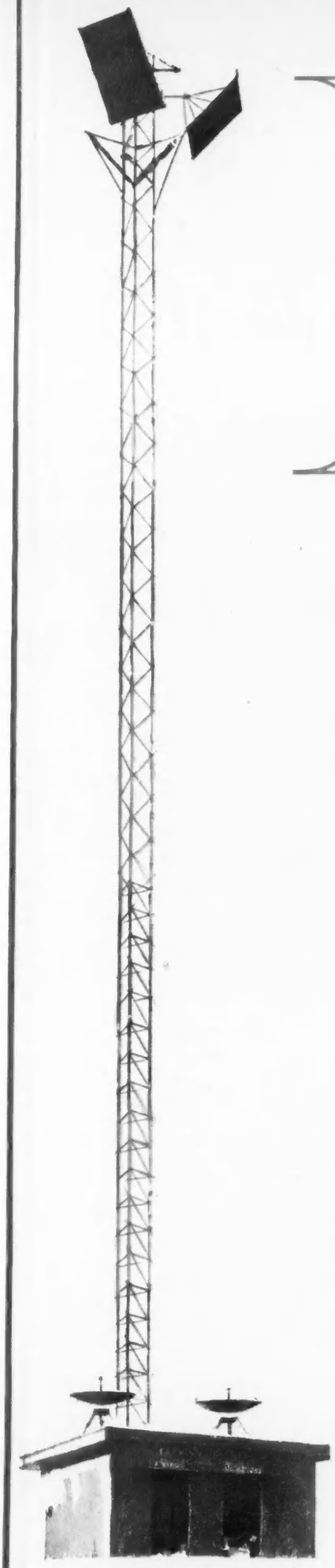
Washington News Notes

Expectations were, as this column was written, that FCC Commissioner *Robert E. Lee* would be confirmed by the Senate for another seven-year term beginning July 1. Mr. Lee's renomination has run into political difficulties stemming from the fact that he was until recently the fourth Republican on the FCC; that under the law not more than four of the seven FCC Commissioners can be members of one political party; and that if the Democrats win the Presidential election this fall, they will be seeking a vacancy so that they take over the majority.

As it stands now, however, Mr. Lee will be confirmed as the third GOP Commission member, and in all likelihood the Eisenhower administration will not name a Commissioner to fill the vacancy caused by the resignation of former Chairman John E. Doerfer until the recess of Congress.

In another area, the mileage study being made by the *Ohio Bell Telephone Co.* of *General Telephone Co. of Ohio* exchange circuit plant probably will be completed by July 26, when hearings are to resume before the Ohio PUC on General of Ohio's toll compensation complaint.

A hearing on legislation to extend the present law dealing with penalties for damage to communications facilities was scheduled by a House Judiciary subcommittee for late in June. Invitations were sent to government agencies expected to offer testimony on the bill introduced by Rep. John Dowdy (D., Tex.) last year. The bill would extend the existing law to impose penalties for damaging communications facilities to include privately owned as well as government-owned equipment. — *Roland Davies and Fred Henck.*



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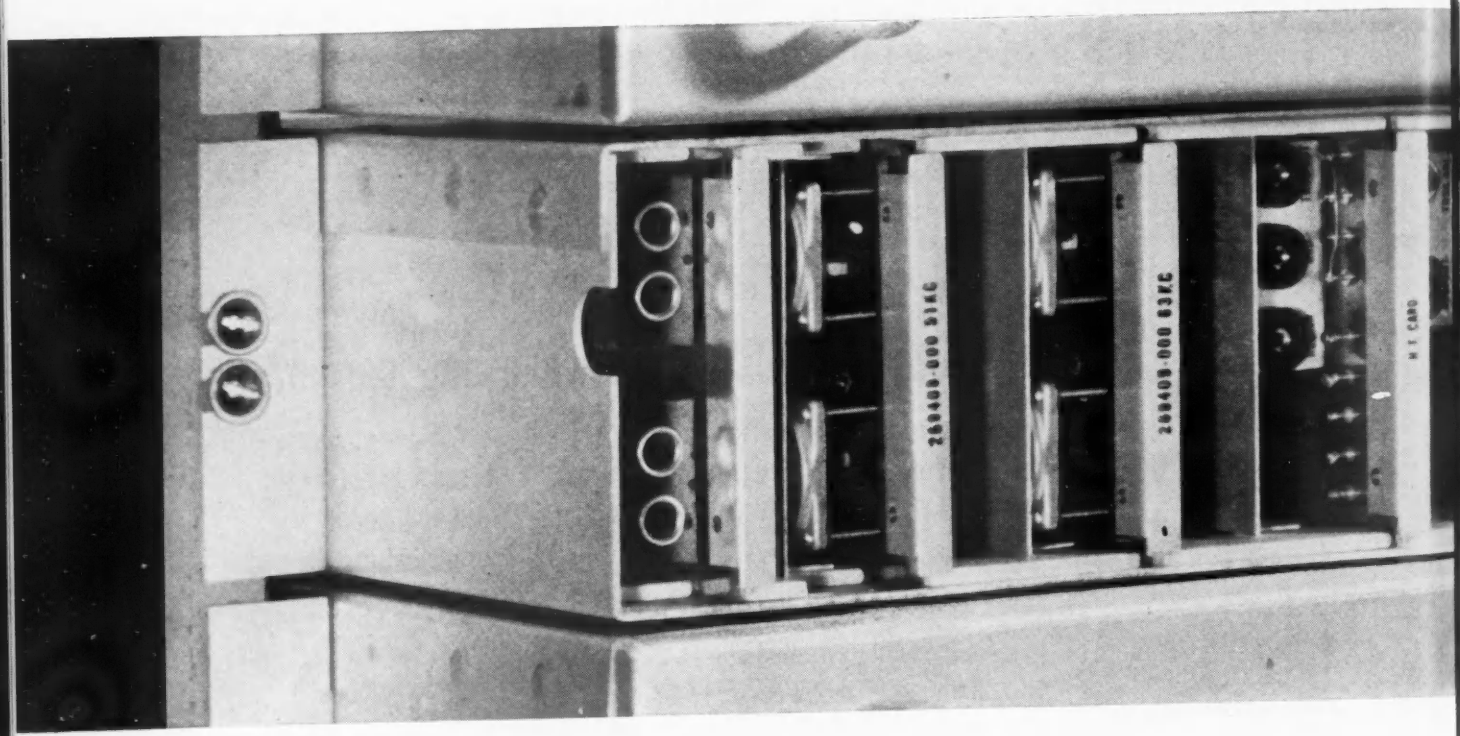

Transistorized Trunk Carrier by Stromberg-Carlson

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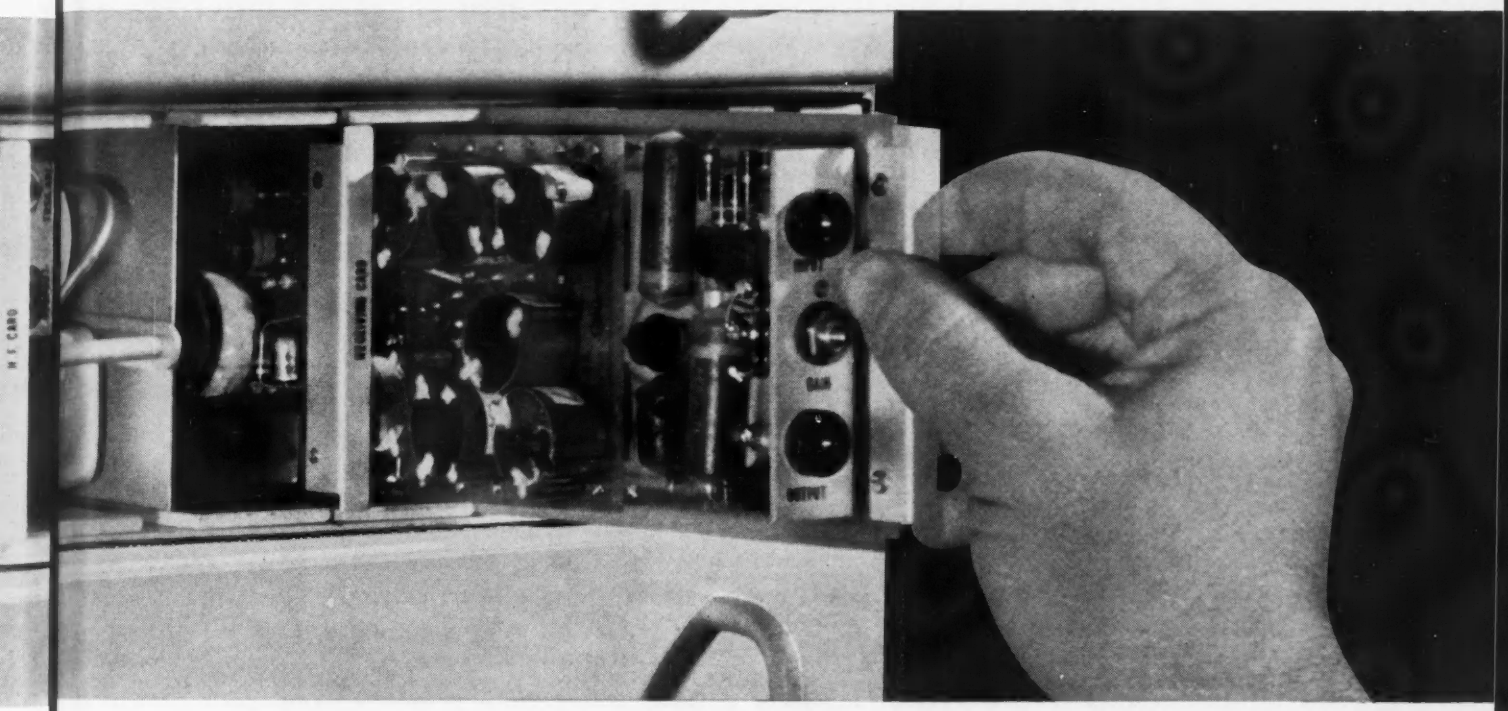

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EDITORIAL

"It's Been A Good Fight"

ALONG with members of the telephone industry and its subscribers we were not pleased with one headline the nation's newspapers carried on June 21st. That headline read: "*Phone, Travel Taxes Retained.*"

The headline came into being when the Senate, by decisive margins of 54 to 30 and 55 to 29, killed amendments which proposed to repeal the 10% levies on passenger travel, telephone service, and telegrams.

Although, the battle *is over* for 1960 there is much evidence at hand to indicate that the telephone industry and its subscribers put up a good fight and convinced many members of Congress that the telephone levy should be terminated.

The fact that on June 15th a majority of the Senate Finance Committee members *refused* to include the taxes on local telephone service, telegrams, and transportation among the excise taxes to be continued for another year, and voted for repeal over the objections of Senator Harry F. Byrd (D., Va.), is, we believe, a clear indication that many Congressmen are fully aware of the exact feelings of the people back home on the so-called "temporary excise tax on telephone service."

For the record, and for the benefit of those who may believe Congressmen deposit their letters from the "folks back home" in "File 13" and forget about them, we believe a few general observations are in order.

One observation concerns the almost fantastic effect which the concerted efforts of telephone companies and their subscribers, in communicating with their Congressmen, had on the June 8 vote in the House. Picture a situation in which the Rules Committee, whose power is seldom contested, agreed to send out the revenue bill to the floor under a closed or "gag" rule, barring amendments from the floor.

The bill itself was an absolute "must" in these days of high government spending and the outlook for an increased defense budget in the wake of the Summit Conference blowup and the generally tense international situation. Since it was presented on a "take it or leave it" basis, there appeared to be no real opportunity even for a protest vote.

Yet, following debate which was devoted almost exclusively to the telephone tax, and discussion of how the public had expected that the tax would be terminated on June 30 in the light of last year's Congressional action, the votes by which the measure squeezed through were close.

After the rule was upheld, a number of Congressmen said that while they were in favor of elimination of the telephone tax, they had no choice but to vote for the bill itself under the circumstances. Despite this, the measure was passed by the relatively close vote of 223-174, with the tally again interpreted as a protest against continuation of the telephone excise.

This protest was carefuly reported by *Rep. Elizabeth Kee* (D., W. Va.) in the weekly newsletter she sends to the "folks back home."

"Perhaps the fact that 174 members went so far as to vote against the entire bill will be a strong reminder to the Ways and Means Committee that when Congress gives its word to the people it must respect that word," Representative Kee stated. "Also, it is a reminder that these so-called 'temporary' taxes must not become permanent. . . ."

We are pleased to note that other members of Congress have made similar comments in the newsletters they send to the "people back home." Along with Representative Elizabeth Kee they are making sure the voters *do* understand their exact feelings on the telephone tax.

This is all to the good. It indicates many Congressmen realize the "people back home" expected them to do their part to bring about the end of the telephone excise tax.

Of course that realization did not bring about the end of the telephone excise tax. But despite the recent Senate action which keeps the tax in force, we are sure of one thing: The telephone industry and its subscribers put up a good fight — a fight that must continue until the excise tax on telephone service is finally terminated.

(The foregoing editorial, although copyrighted, may be reprinted in whole or in part without charge provided the publication's name and address are shown on the reprint, four copies of the reprint are filed with this publication, and the editor is advised of number of reprints made. This legend need not appear on the publication.)

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These incidents, drawn more or less at random from a half-century of telephone memories, are factual; but in many cases names are omitted or disguised to avoid the possibility of annoyance to those concerned. — (Part Two.)

NOT ACCORDING TO SPEC....

BY L. A. GRITTEN

MY FIRST telephone job, in 1903, seems as remote and different as a chapter in a Dickens novel. I was a testroom assistant in the engineering branch of the *Post Office* in *London*. There we made every conceivable kind of test — electrical, chemical or mechanical — of nearly everything used for telegraph or telephone work in Great Britain.

We had a wide variety of scientific testing equipment, from ultrasensitive galvanometers to massive hydraulic machines for breakdown tests. Much of our testing was unnecessary from a commercial point of view; the department was a good example of Parkinson's Law in operation long before Parkinson; but it was grand general education for us youngsters. One day we would make precisely accurate conductivity tests of cables; next day we might help to analyze samples of paint, or make a breakdown tensile test of tie bolts or a torsional destruction of crossarms. We never lacked interest and variety to compensate us for our slender salaries. My starting wage was 16 shillings a week, about $3.88 at the rate of exchange then prevailing.

At the head of the department was *F. L. Henley*, engineer and athlete. He made an impressive entry each morning, immaculate in high silk hat and cutaway morning coat. One morning, the story ran, on his way to the office he was attacked by two would-be robbers. They saw that he had a big gold watch chain but they did not know that he was a good boxer. He knocked them both out very cold, stacked them neatly in the gutter, pinned his business card on the uppermost and 'phoned the police to collect the debris.

At the other end of our testing staff was *George Barnsley*, a hard-bitten old navy veteran who had been given a retirement job with us. He was a link with the past. He had manned a gun at the bombardment of Alexandria in 1882. He had served in one of the first submarines in the British navy. His chief impression of that, apart from double pay for every hour down under, seemed to be that when they were up they were seldom sure that they could go down; and when they submerged they regarded it as a matter of pure luck whether they would get up again.

He was a skilled mechanic and a good friend to us boys. There came the day when the old fellow lay ill.

The doctor told us that he had at most a few days left. Another youngster and I went to see him. Dying alone in a squalid single room in a squalid neighborhood, he had no illusions.

We asked him if he would like some flowers to brighten up the room.

"Trying to insult me on my deathbed?" he demanded. "Bring me a bottle of Johnny Walker."

We pointed out that the doctor might not approve. "Who in Hell is doing the dying, me or the doctor?" he demanded.

That was unanswerable. We left him happier. A day or so later he was gone. We may have hastened his finish, but we preferred to think that we had cheered his lonely last hours.

After about four years, the green fields over the hill seemed greener than ever. There were Australia, India, New Zealand, South Africa, Canada and dozens of assorted British colonies and dependencies to choose from. Canada seemed nearest and easiest, so one hot summer morning in 1907 I handed my "To Whom It May Concern" recommendations to the plant superintendent of the *Bell Telephone Company* in Winnipeg.

His response was in delightful contrast to the pseudo-scientific inquisitions that the Personnel boys now inflict upon their victims. He pushed back the letters with hardly a glance, and said: "Report here for work after lunch. We'll find out what you can do, without those."

Thereafter I slaved for nine hours a day, six days a week, on a multiple-position test desk. It was during the great western Canadian boom. Winnipeg was a rapidly expanding madhouse and that testboard was the maddest part of it.

Not West Enough

YOUTHFULLY, I had come to Canada with visions of the Wild West, fighting the wide open spaces, Indians, buffaloes and romance — and here I was in a city I disliked, more closely confined than ever.

A few weeks later, a survey engineer for the *Canadian Pacific Railway* was saying to me: "O.K. We'll take you on as chainman. Preliminary survey. You'll be clear out of civilization for months at a time, so bring nothing you can't pack on your back. Baggage? Baggage, my foot! Toothbrush with the handle sawn off. We pull out of here at 5 p.m. sharp."

That was about 11 a.m., leaving me little time to make my adieus to Mother Bell.

"Young man," I was told by the angry superintendent, "You may not realize it but you are putting yourself on the blacklist of the entire Bell System, quitting like this. You'll never get another telephone job on this continent." It sounded terrible. I was excommunicated, a moral and social leper.

There followed a year or more of living close to nature. I got all the rough stuff I had pined for in full measure, with a little to spare. Canadian Pacific's preliminary surveys through uninhabited country were anything but beds of roses; but if you were young and tough it was good fun, and I loved it. Then one day I was back in Winnipeg, with a broken arm in a sling. In a cafe I met the telephone superintendent who had put the curse on me. He was pleasant.

"When can you come to work?" he asked.

"Broken arm," I pointed out.

"That's O. K. We'll give you a job sorting cards until it heals."

"What about that Bell System blacklist?" I asked.

"Oh, forget it," he replied. "I was mad. See you in the morning. Anyway, it isn't Bell System any more. It is *Manitoba Government* now."

Somehow I liked Winnipeg better. It was a good boom in the West in those days.

No Belief In Signs

FOR A FEW months I installed telephones. The installers' room was not exactly a church. One evening when we came in, George, the chief installer, had posted a big sign reading: POSITIVELY NO SMOKING OR SPITTING.

In came Jim, a Long Distance line trouble shooter. He was a tough and privileged character. He chewed tobacco. He spat. With appropriate profanity, George called his attention to the sign.

Jim leaned back in his chair, chewed thoughtfully and said: "I gotta dollar says you can't come as close to the 'NO'."

He let fly, at a range of several feet. He missed the "NO" by several inches. Then he handed his plug to George. It was a spirited contest. George came closer and took the dollar. Somehow the sign seemed to lose its significance.

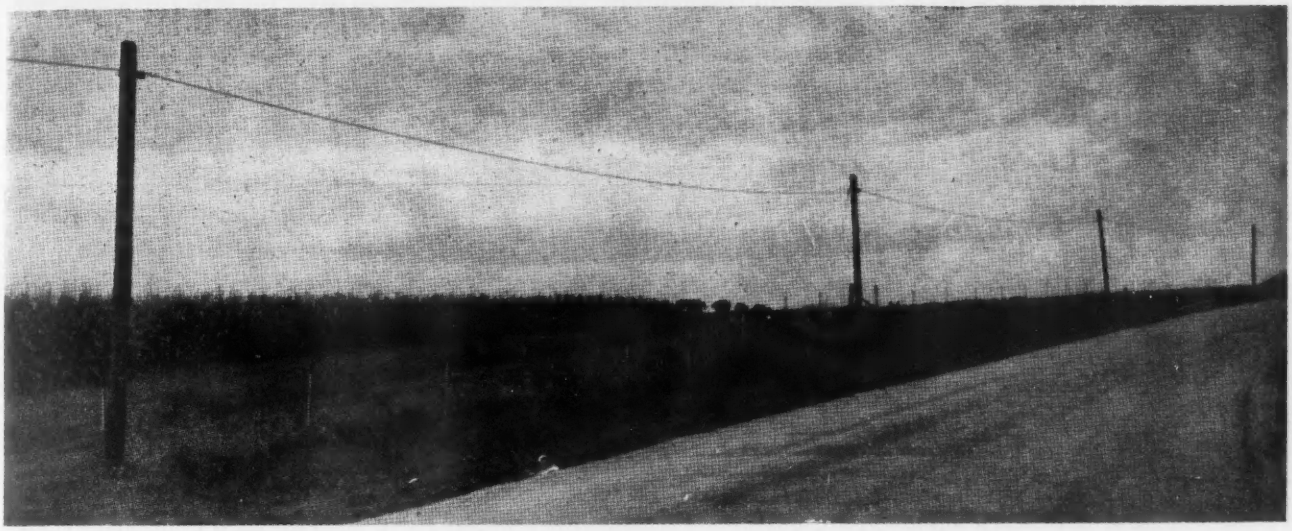
In Winnipeg several of us ate in a little cafe run by a Parisian couple. They sold a punch ticket good for 21 meals (all dinners, if you liked!) for $3.50; and the food was good, plentiful and well cooked. We took care not to investigate the kitchen; we wished to avoid disillusion. The worst part of telephone installing or trouble shooting in those days was that one saw the inner workings of the restaurants one ate in. Nowadays, no doubt, they are as clean as a maiden's mind; but in the pre-inspection, pre-refrigeration era the average restaurant kitchen was crawling with disease. The customers got what the cooks reclaimed from rats, cockroaches and flies.

A Coffee Break, Plus

LATER ON, in Edmonton, a group of us telephone men used to frequent a certain hotel where the coffee was really good. Two huge urns were kept going all day. After the cafe closed at night, the night man would clean out the urns. When the cook came in the morning, he would toss in the coffee and pour in the water — and he had to reach up to do it.

One night, the night man found four little kittens in

Please turn to page 50



Plant:—Modern Cable Construction

By JOHN S. REED

CHAPTER XI-B of Mr. Reed's article discusses* (1) *multiple duct concrete conduit, and* (2) *soapstone conduit. Chapter XI-A appeared in the April* 15, 1959 *issue of TE&M.

Multiple Duct Concrete Conduit

RECENT development in multiple duct types of conduit is the multiple duct concrete conduit shown in *Figure* 321. The parent company that originated the idea and developed the machines for producing the conduit is the Gagne Enterprises, Inc.

The multiple duct concrete conduit is made in 6- and 9-duct sizes with sections of standard length (36 inches) and round duct bore of 3½ inches. The weight of a 6-duct conduit section is 180 pounds. One end of a conduit section is bell-shaped and the other end is made plain and square cut, enabling the units to be fitted together in the same manner as sewer tile. The joints are sealed with a special compound.

The cement selected for use in the concrete mix has a very low alkali content and tests indicate that the sheath of lead-covered cable will not be corroded by contact with the concrete conduit. The concrete mix is of such composition as to produce a dense and smooth texture on compression and vibration in the mold. The conduit sections molded in this manner can be extruded whole and allowed to harden outside the mold without settling or sagging, or changing its dimensions.

FIGURE 321: — Appearance of 6-duct concrete conduit (Elmore Concrete Products Co., Licensee of Gagne Enterprises, Inc.)

The conduit sections are manufactured by a special molding machine which consists of a steel mold constructed with the bell end at the top and the bottom end resting on a platform. The dimensions at the bottom of the mold are slightly less than those at the top to facilitate extrusion of the conduit from the mold.

A lower pressure-platen, having round mandrel holes in it, rests upon lugs formed on the inside of the mold near its lower end. Passing through the lower platen are round mandrels which form the duct bore. The conduit section is extruded from the mold by a hydraulic piston and cylinder arrangement below the platform that supports the mold.

An upper platen through which the mandrels also extend is provided at the top of the mold. Pressure is applied to the upper platen by a pressure arbor. The mold is vibrated by electric vibrators attached to the mold. After the mold is filled with cement mix and is vibrated to compact the mix, the upper platen is relieved of its pressure and a section of conduit with round bore ducts is extruded from the mold by pressure on the lower platen.

FIGURE 322: — Unloading and piling concrete conduit sections. Note that sections can be dropped to soft ground without breakage.

FIGURE 323: — Laying large conduit sections with mechanical loader. Travel bar at top of frame enables sidewise shifting of conduit from side location at trench to proper position for lowering the conduit.

FIGURE 324: — Using applicator to form outside bead of sewer joint compound. Note bead of compound inside of open end of conduit section previously applied.

FIGURE 325: —Closeup of final application of outside bead of compound to joint in conduit sections.

Following the extruding process, the conduit sections are steam cured for a period of time at a minimum temperature of 120°F. The duct bores are then honed to reduce the coefficient of friction of the inside surfaces.

The resulting product has a compression strength of 10,000 p.s.i. and water absorption of 3.9 per cent. The strength of the conduit is such that the breakage factor is less than one per cent. Since it is important that the joining surfaces of the conduit sections are sound and complete, the dimensional tolerances are maintained within narrow limits.

The concrete conduit sections can be hauled to the job site on flat bed trucks and, if the ground is not frozen, they can be dropped directly on the ground without damage, as indicated in *Figure* 322.

The concrete conduit sections are laid in the trench either by hand or by a mechanical hoist arrangement (for the heavier conduit sections) as indicated in *Figure* 323. Before each section is placed, a bead of sewer joint compound is applied to the inside of the bell end (*Figures* 324 *and* 325) with an applicator (Alemite gun). Pressure for the applicator operation is supplied by an air compressor.

Starting at the manhole end, the first section of conduit is lowered into the trench with the plain end fitting in the conduit opening of the manhole. The next unit is lowered into and joined to the next section.

After laying 15 or 20 sections in the trench, more compound is applied to the joints with the applicator to fill these joints. This portion of the conduit line is then backfilled. No concrete encasement is required, nor are concrete caps or bases needed, since the concrete conduit has adequate strength to protect the cables laid inside it.

Additional conduit sections are laid in the same manner until the complete length between manholes is placed. If a section of odd length is needed to fill out the line, the last section is cut with a special power saw to fit the remaining space. The rapidity with which the conduit can be laid de-

Please turn to page 51

Electronic Communications

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Stars Will Aid In Checking Satellite Tracking System

MAN'S MOST ancient aid in navigation, the stars, is playing a new role in helping to pinpoint the locations of man-projected satellites in space.

According to the Radio Division of Bendix Aviation Corp., maker of major components for two U. S. satellite-tracking systems, the star-aided calibration of a satellite's path starts with an aircraft in flight on a bright, starlit night. A blinker light on the aircraft's under side is actuated by a timed radio signal from the Minitrack station under test. A precision camera setup on the ground tracks the light on the aircraft. The position of the aircraft in space is determined by the photographic record of its location measured against the background stars.

At the same time a 108-megacycle "carrier wave" radio signal is transmitted from the aircraft and recorded by the Minitrack station. The position of the plane as revealed by the radio signal received by the Minitrack equipment is compared with the evidence of the starlit photographs and any errors of calibration are exposed. Each Minitrack site is calibrated three times a year.

The Minitrack system, which has tracked all 20 of the U. S. and Russian satellites, will be composed of 14 sites deployed from Alaska to Chile and from Australia to South Africa. This primary tracking system for all space experiments undertaken by the National Aeronautics and Space Administration is at present operated by Bendix Radio field engineers at about half of the sites.

The procedure in tracking satellites actually starts well before the launching: a predicted orbit is entered in a central computer in Washington. Initial tracking immediately after launch is accomplished by radar. As successive stages of the satellite separate, however, most radars can no longer track the satellite effectively at altitudes of more than several hundred miles. Minitrack, which is so sensitive that it can "hear" invisible stars, then provides the essential data to the computer. As data from the radars and Minitracks are received, corrections on the predicted orbit are made automatically. Although the precise orbit of a satellite theoretically could be established after one pass, in practice, it is the second pass that produces the data for the first calculated orbit.

Initial Minitrack data reduction is done at the sites by the field crews and results are immediately teletyped to Washington. In a matter of minutes after the second pass, not only the actual orbit but the expected life of the satellite is known.

Bendix Radio crews maintain a timetable for the transit of each active satellite and are on hand 24 hours a day to record every pass. Telemetered data from the satellite is recorded on tapes, most of which are preserved for analysis.

Second Over-the-Horizon System Uses "Tropic Scatter Propagation"

OVER-THE-HORIZON radio transmission, the newest method of lobbing telephone messages across vast bodies of land and water, provides service between the United States and Nassau. The system was designed to meet the expanding telephone traffic between this country and the popular British colonial resort area. Using a technique of blasting microwaves beyond the curvature of the earth, it carries 24 simultaneous telephone conversations. If need be, the system can be expanded to 72 circuits.

The Long Lines Department of American Telephone & Telegraph Co. and the Telecommunications Department of the Bahamian Government built the new radio link at a cost of $1,500,000.

The addition of the telephone circuits will relieve traffic on the nine radiotelephone circuits now in operation. The new system will substantially improve trans-

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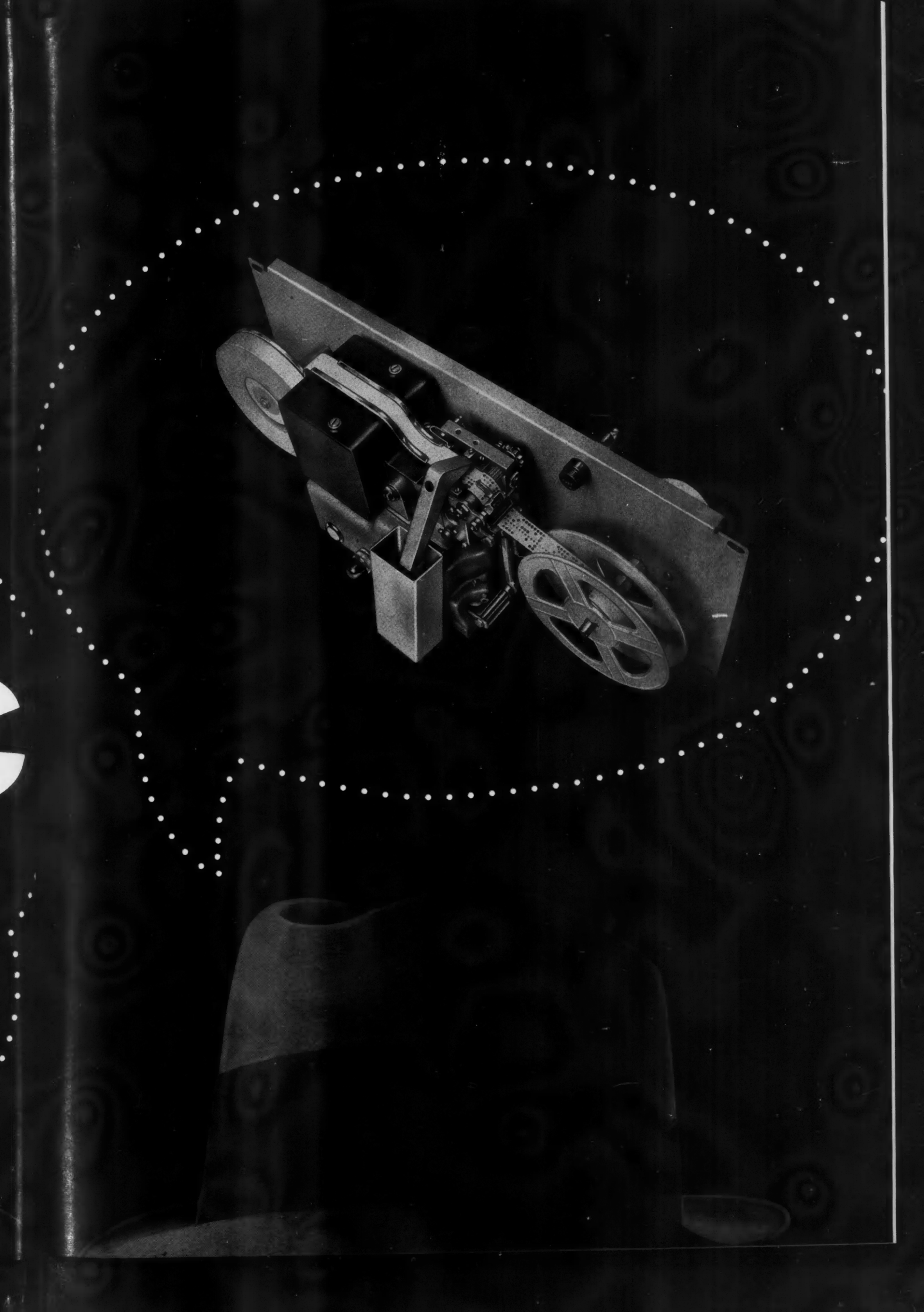

TELEPHONE ENGINEER & MANAGEMENT'S
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By LEO G. SANDS

6.3 TESTING TRANSISTORS

6.3-1 SUBSTITUTION METHOD

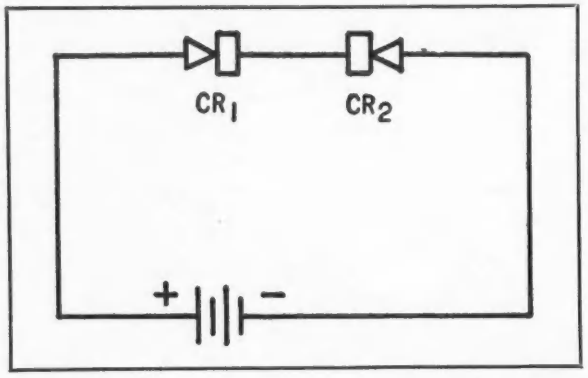
As with tubes, the most straightforward way to test a transistor is to replace it with a new one, noting if operation returns to normal with the new transistor in place.

6.3-2 CURRENT METHOD

In the case of a tube, plate or cathode, current is generally "below" normal when the tube is defective. But, in a defective transistor, collector current is generally "higher" than normal.

6.3-3 LEAKAGE TEST

A transistor simply looks like two diodes connected back-to-back. In the diagram below CR-1 permits current flow while CR-2 opposes current flow. In the other diagram CR-2 shows but little resistance to current flow, but CR-1 opposes it.



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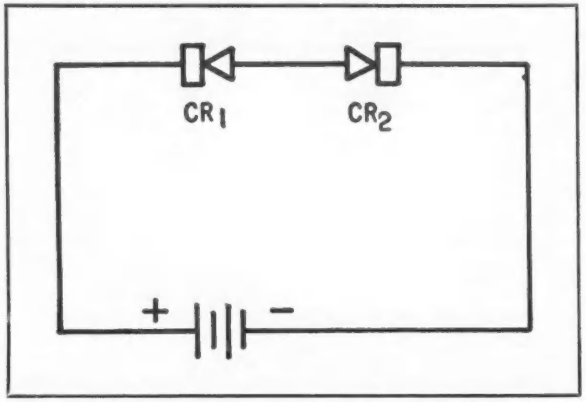
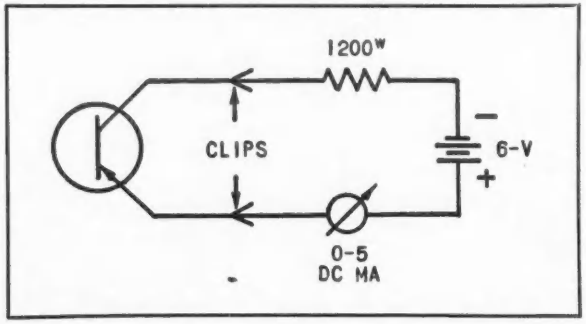


A transistor can be easily tested for leakage by connecting a 0-5 d-c milliammeter, a 6-volt dry battery and a 1200-ohm resistor in series with the



emitter and collector of a transistor with clip leads as shown. If the transistor is shorted, the meter

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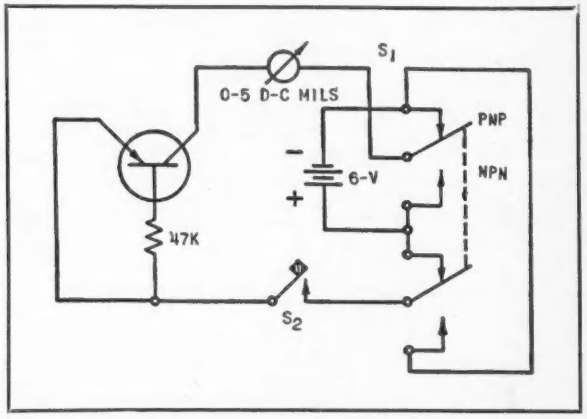
By LEO G. SANDS

will read full scale. If the meter indicates more than one ma (1/5 full scale), you can assume that the transistor is no longer useful. (Note that the base of the transistor is not connected during this test.)

6.3-4 COLLECTOR CURRENT TEST

The diagram shows a simple circuit for measuring collector current. In building such a tester a



socket may be provided for plug-in transistors and clip leads may be used for testing lead-type transistors. S1 is set so that a negative voltage is applied when testing PNP transistors, and to apply a positive voltage when testing NPN transistors.

The collector current as indicated by the meter should not exceed three times the product of the transistor's Beta (B) and collector current (Ico).

More Data For Your "Electronics Notebook" In The Next Issue.

Electronic Communications

(Concluded from page 31)

mission and provide greater service between the U. S. and Nassau.

Telephone traffic in the past 10 years has increased more than sevenfold. In 1949, messages handled by Long Lines numbered 12,000 and during 1959 traffic rose to over 80,000 messages. A large portion of the traffic is due to the growing number of annual tourists and the rapid commercial development in the islands. Ten years ago, 32,000 tourists visited the Bahamas. This year the Bahama Development Board in Nassau estimates more than a quarter of a million tourists will spend time there.

Terminals for the system are located at Florida City, Florida, and Delaporte Point on New Providence Island in the Bahamas. The distance between the two sites is 186 miles.

The system is the second two-way over-the-horizon communication route to be placed in service for commercial use between the States and overseas points. The first was between Florida and Cuba, having been placed in service in September, 1957. The same building houses the two over-the-horizon systems.

At Florida City a 37-mile microwave radio relay route connects over-the-horizon circuits to Miami, Florida. There, through switching equipment of Southern Bell Telephone & Telegraph Co., connection is made to the entire telephone network of the United States. A similar system on New Providence Island extending 6½ miles between Delaporte Point and Nassau provides connection to telephone network in the Bahamas.

This type of operation is known technically as "tropospheric scatter." By use of high-power transmitters and giant antennas, radio waves in ultra-high frequency band are forced beyond earth's curvature (over-the-horizon). The main beam goes out in a straight line but small amount of energy scatters and is picked up by distant antennas at other end of route. It differs from line-of-sight microwave transmission, which requires amplification every 30 to 40 miles. Also, the signals can be sent five or six times farther and can span bodies of water with high signal reliability and freedom from interference.

At Florida City there are two circular antennas, 30 feet in diameter, mounted on 471½-foot towers. At Delaporte Point, the antennas are mounted 15 feet above the ground. Each antenna transmits signals on a different frequency. However, both antennas receive both frequencies transmitted from the distant end. By use of two frequencies, chances of service interruption through failure of either frequency channel are greatly reduced.

In front of each antenna is a feedhorn. The feedhorn has a rectangular "throat" facing the antenna. Radio signals to be sent over-the-horizon are carried from terminal building up through wave guides to the feedhorn, and focused by the antenna in a beam directed at the distant antenna.

Near the antennas at both Florida City and Delaporte Point are buildings which house terminal equipment to operate both the over-the-horizon and connecting microwave route. Although line-of-sight microwave transmission requires very little power, the over-the-horizon system has to use two 10 kilowatt transmitters at each end. There is an emergency engine-driven power supply in each building for use in the event of commercial power failure.

Signals picked up by the distant receiving antenna are focused towards mouth of horn which, in turn, carries them to receiving equipment in terminal building for amplification and transmission over connecting facilities.

Over-the-horizon equipment at U. S. end was manufactured by I.T.T. Laboratories, at Nutley, N. J. Equipment at Nassau end was manufactured by Standard Telephones and Cables, Ltd., in London, England.

Pocket Signal Device Tested

THE CLOSEST thing to a pocket telephone started test runs in Springfield, Ill., recently when Illinois Bell Telephone Co. started testing a pocket-size signal set, the "Bellboy," which "beeps" you whenever you are wanted at home or the office.

"Essentially it's an extension of the bell on your telephone," says A. G. Berg, Illinois Bell's community relations manager.

The 7½-ounce plastic, hand-size "Bellboy" sounds a gentle beeping tone as you walk down the street, ride in your car or watch a ball game. That's the warning that you should call home or your office.

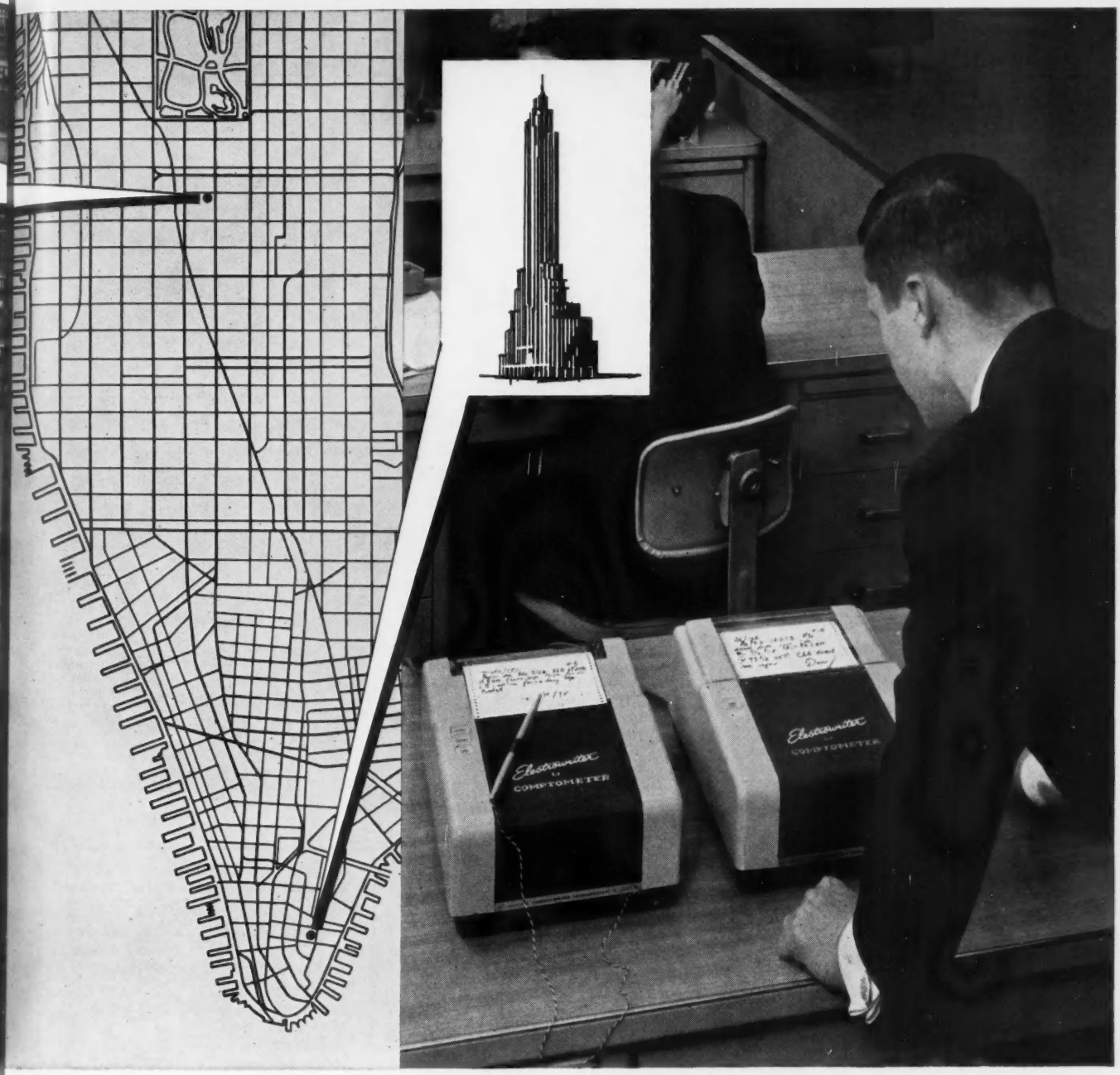
The "Bellboy" started operation in Springfield May 15 when the telephone company completed the installation of an antenna atop the Ridgely building, chosen because of its height.

For Blind Stockholders

BLIND stockholders of American Telephone & Telegraph Co. won't be in the dark about their company's financial situation this year. The company is putting out two special editions for its sightless owners — one in braille and one on a phonograph record. Copies will be personally delivered to stockholders who ask for them by members of the Telephone Pioneers of America, an organization of long-service and retired telephone employes. This year's venture is experimental. If the Pioneers report favorable reactions, special reports for the blind will continue. About 3,600 out of the 1,737,000 stockholders are blind. The reports have also been distributed to various libraries for the blind.

How Merrill Lynch, Pierce, Fenner & Smith Inc. solves written message problem between offices

Priority inquiries on margin and cash accounts are instantaneously sent by Electrowriter transmitter from the Merrill Lynch, Pierce, Fenner & Smith Inc. branch office in the new Time-Life Building at Rockefeller Center, New York City . . .



to Electrowriter receiver located at Merrill Lynch main office in downtown Manhattan. Clerk checks credit and debit balance, buying power, and immediately transmits answer back to Time-Life Building with Electrowriter transmitter.

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"SUB-HARMONICS and OVERTONES"

By C. D. EHINGER

A Fundamental Approach to VNL

In previous issues, Mr. Ehinger discussed two factors which provide practical limitations on transmission levels — echo and singing. In this article, a third factor is discussed and Via Net Loss factors and their use are also covered.

THE THIRD "worm in the woodwork" to the design and engineering of toll transmission circuits is Noise and Cross-talk. This item can also be a source of annoyance and trouble to the toll user. Like echo and singing, there is a practical limitation to the amount of noise and cross-talk which any individual subscriber will tolerate. Careful design and construction can go far in helping to eliminate the problem at its source.

Much has been written about the elimination of both noise and cross-talk and it is not necessary to carefully detail all such items. In the well-built plant, careful attention to balancing of cables, adequate and accurate transposition schemes, coordination with power companies, etc., will minimize these problems. Central office layout can also be an aid in suppressing noise and cross-talk. This point is especially true in regard to location of carriers and repeaters in such a manner as to minimize inter-action between these units.

Resume of Points Covered

AT THIS TIME a short resume of all of the foregoing may well be in order. To this point, we have discussed the following:

(1) In Distance Dialing, many more switching points are involved than were formerly involved when manual switching was used.

(2) In Distance Dialing, an ultimate of eight inter-toll links and two terminal links may be involved.

(3) It is imperative that all toll calls, regardless of the number of inter-toll links involved, have uniformity of transmission.

(4) An ideal solution would be to have each toll circuit operated at zero loss; however, this is impractical.

(5) Limiting deterrents to operating toll circuits at zero loss are: (a) Echo; (b) singing; and (c) noise and cross-talk.

Via Net Loss

ALL OF the above factors were considered in the field tests and other approaches to the problem, in order to come up with the practical transmission objectives which have been called Via Net Loss or VNL. This has been defined as "the loss of an inter-toll trunk when it is an intermediate link in a switched connection."

Again referring back to *Figure One*, used in the discussion on echo and singing, it was pointed out that the impedance of A and B (talker and listener) varied widely, depending upon the type of facility and, also, the frequency band.

Practical experience, in the field, has proven this to be true only when the end termination involves the subscriber's handset and local plant facilities. Impedance variations and swings are not nearly as great when the terminations are other inter-toll circuits. In other words, we can come closer to good balance conditions when an inter-toll circuit is only part of a chain and is terminated at both ends by other inter-toll circuits. When the termination at either end is anything other than an inter-toll circuit, balance is impaired and the circuit must be operated at a lower level in order to be stable.

Table One lists Via Net Loss factors for various types of plant facilities.

TABLE ONE

Via Net Loss Factors for Typical Telephone Facilities

Facility	VNLF (db per mile) 2-Wire Facility	4-Wire Facility
19H 88-50 side	.03	.014
19H 88-50 phantom	.03	.014
19B 88-50 side	.04	....
19B 88-50 phantom	.04	....
19H 44-25 side	....	.010
19H 44-25 phantom	....	.010
Open wire, voice frequency	.01	....
Open wire carrier (all types)	....	.0017
Type K or N carrier	....	.0019
Type L carrier	....	.0015
Carrier circuits on radio	....	.0014
H88 on paired exchange type cable, any gauge	.04	

For each total circuit facility, add .4 db for maintenance variation.

By using the above VNL factors, it is a simple matter to calculate design objectives for inter-toll trunks. It must be remembered that VNL applies to inter-toll trunks only (trunks which are not the terminating link). In the case where the trunk under question is the terminating trunk (trunk to the end office in any toll

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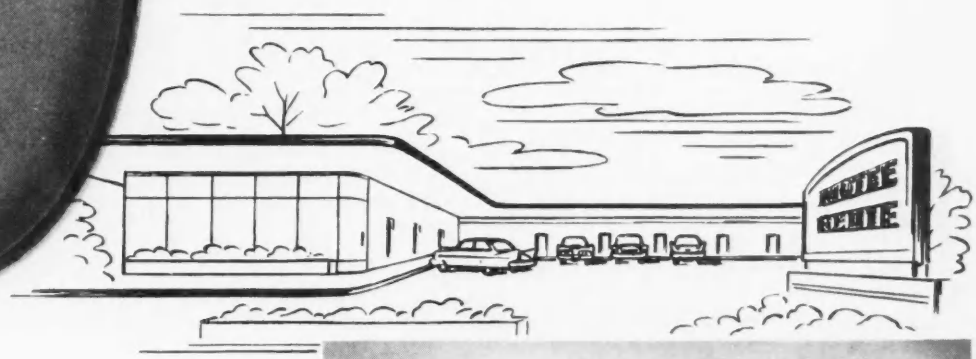

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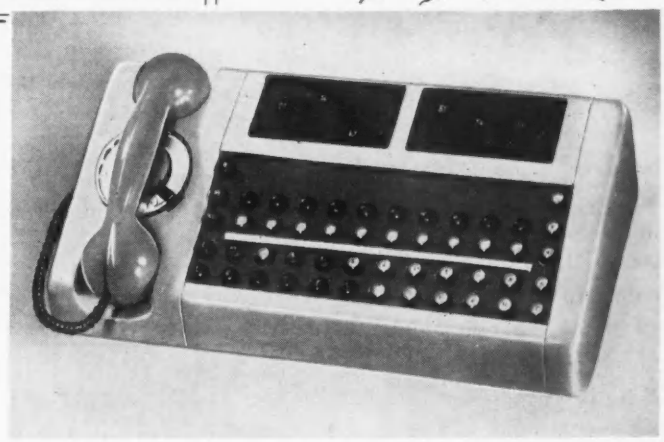

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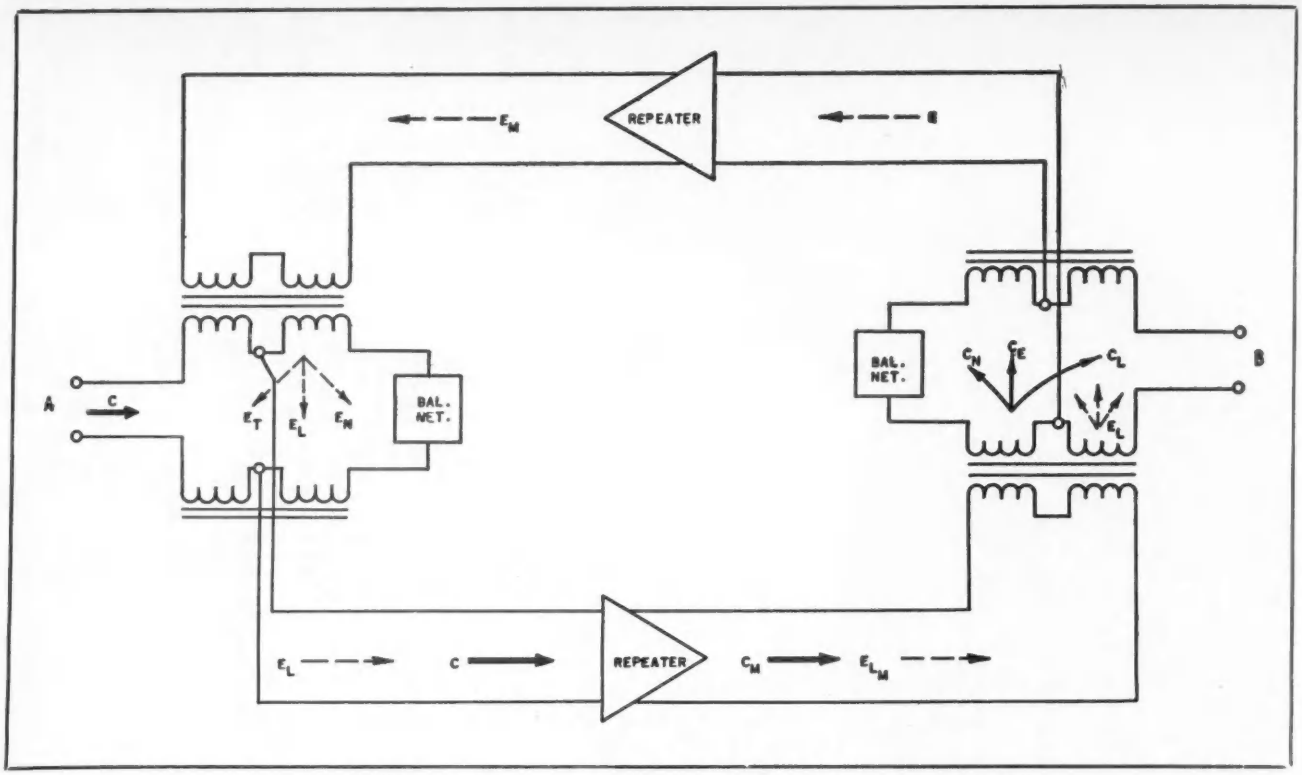

FIGURE ONE: — Energy paths (and undesired paths) in typical toll call.

call) the circuit should be engineered for a total VNL + 2 db loss.

Some Examples

USE OF the Via Net Loss factors can best be illustrated by a few examples:

Example One:

Toll circuits between two toll centers are to be engineered. Circuit make-up consists of a total of five miles of 19 ga. H 88-50 cable plus sixty miles of open wire. The circuits are to be operated as two-wire facilities. What should be the design objective for VNL operation?

Since each point is a toll center, and the circuits will be used as intertoll links, as well as terminating links, they should be designed for VNL. This loss is calculated as follows:

(factors from Table One)				
5 mi.	×	.03	=	.15
60 mi.	×	.01	=	.6
Maintenance variation				.4
Total			=	1.15 db

Therefore, the required transmission level, in order to meet the VNL design objective, is 1.15 db. Actual losses on such a circuit will be in the neighborhood of 7.7 db. In this case it will be necessary to provide voice frequency repeaters which will furnish approximately 6.5 db gain in order to meet the design objective.

What about the cases where these circuits will be used as terminating, or end office, circuits in toll calls terminating in either exchange?

As previously pointed out, the terminating circuits should be operated at VNL + 2 db in order to maintain stability over the entire chain involved in the toll call. In the example under discussion, each office should have 2 db pads, either switched or fixed, which are inserted in this circuit when a call is terminated in either office.

(To be concluded)

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Any comments, criticisms, or suggestions for future topics? Address all correspondence to "Sub-Harmonics and Overtones," Telephone Engineer & Management, 7720 Sheridan Road, Chicago 26, Ill.

Video Pair Data

GENERAL Cable Corporation has announced the publication of a "Basic Data Sheet for Video Pairs." This new data sheet provides a full description of Video Pair construction and gives such technical characteristics as conductor resistance, mutual capacitance, capacitance unbalance, dielectric strength, internal echo, and characteristic impedance, all of which are of interest to the design or operating engineer. In addition, a curve is provided for attenuation vs. frequency.

Also, tables of physical data are provided in the data sheet for Video Pair cables and for composite video and telephone cables, as well as information for each type of core.

Copies of the "Basic Data Sheet for Video Pairs," No. VP-1, may be obtained from the *Advertising Department of the General Cable Corporation, 730 Third Avenue, Dept. TE&M, New York 17, New York.*

Timber Conservation

BOOKLET from Taylor-Colquitt Co. gives words-and-pictures history of a company which has pioneered in better methods of timber conservation, and data on vapor-dried timber products. To obtain copy write *M. P. Brown, Vice President-Sales, Taylor-Colquitt Co., Dept. TEM, Spartanburg, S. C.*

"TRAFFIC LIGHTS" by D. A. PERIGO

The Traffic Engineer and Statistics

The man who wears the hat marked "Traffic Engineer" is a statistician, a mathematician, a prophet, an idealist, and a diplomat. He must be able to outline the ideal method of operation and know when to stick to the ideal, or how far to back off.

FROM TIME to time we receive requests for information about Traffic Enginering. This is a subject that has generally been looked upon by a few Independent companies as something they can do without. Actually, what they are doing without is the title, for someone does the traffic engineering regardless of what it is called.

We would like to be unusually *non*-technical about traffic engineering and present something of interest for those who operate only a CDO company, as well as for those who look upon traffic engineering in the usual technical sense. In the small company, of course, one individual wears many hats — and we will talk about him as he wears the one marked "Traffic Engineer."

"A Versatile Man"

LET'S GET a picture of the Traffic Engineer. He is a statistician, a mathematician, a prophet, an idealist, and a diplomat. He must be able to interpret the historical data of usage, calculate the effect on the future, apply judgment, outline the ideal method of operation, and know when to stick to the ideal or how far to back off.

Perhaps we should emphasize again the Traffic function in the Telephone business. Telephone calls are our products — and the Traffic Department in any business is expected to move the company's products. In our case it applies to the call across the street, across the city, across the country, or to the other side of the world. It makes no difference whether the call is handled by an operator or whether the customer dumps it into the equipment — it is still the traffic function to get the call through.

The traffic engineer is the guy who figures out how much of what is needed to accomplish this. Many times in the past a small company has bought equipment for a 500 line office on the basis of how much equipment was needed in a 500 line office in another part of the country — and often found there was something wrong with the service after cutover. Every office is a special hand tailored job to fit the needs of a particular group of subscribers. For example, our 500 line office may be in an agricultural community, a manufacturing community, a fishing port, a seasonal resort, or a commuter's paradise. The traffic pattern will differ in each of these places and, while each one requires 500 lines, the requirements for paths through the equipment will be different.

Generally speaking, the traffic engineer is interested in amounts of equipment rather than type. For example, he decides that ten circuits are required between two offices — but someone else decides on whether to provide the ten with open wire and carrier, cable (and carrier) microwave, or with whatever other way may develop. In the one man company this means that while wearing the Traffic Engineer hat our man decides how many are needed — then changes hats and begins to figure how to provide them. Let's make one big point — he cannot make a proper decision on the *method* of providing these circuits until he knows *how many* he needs, because the quantity, as engineered by traffic, helps in the decision of "what kind."

Expansion Problems

IN MOST cases today the traffic engineer is dealing with problems of expanding an office due to growth, or converting to another type of operation such as local dial, Direct Distance Dialing, Extended Area Service, or Mark Sensing.

There is one place to start — and that is with statistical data. One of the nice things about the traffic work is that the same statistics which are used for the day to day administration can be used by the traffic engineer. These include the traffic volumes, generally known as peg counts, but may go into greater detail.

For example, in converting from manual to dial, PBX traffic may be a problem because you will need the "hunting" feature which makes the connecting equipment "hunt" for an

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IS FRIENDSHIP'S BEST FRIEND!

Here's a good thought for the over 8,000,000 readers of *American Home* and *Better Homes and Gardens*. It's expressed in a Bell System advertisement appearing in the July issues of these nationally-read magazines.

The value of the telephone to our customers doesn't end with calls that order a dozen sheets, or make an appointment with the dentist, or find out if the garage has the car ready.

Just as valuable are the calls that keep two friends in touch, help them swap some news, and maybe plan a get-together for next Saturday night.

It's good business for us to remind people of those calls. The more our customers value the telephone, the more they will value the telephone companies that serve them.

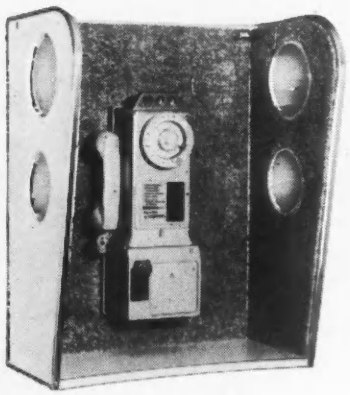
BELL TELEPHONE SYSTEM

MODEL GP4020

ACOUSTIC .... ATTRACTIVE...
EASY TO INSTALL & MAINTAIN
.... HIGH QUALITY... VARIETY
OF MODELS & SIGNS.....
DECORATOR COLORS .....

"Shelf-ettes"

BY GLADWIN



ACOUSTIC MODEL GP4010 CP

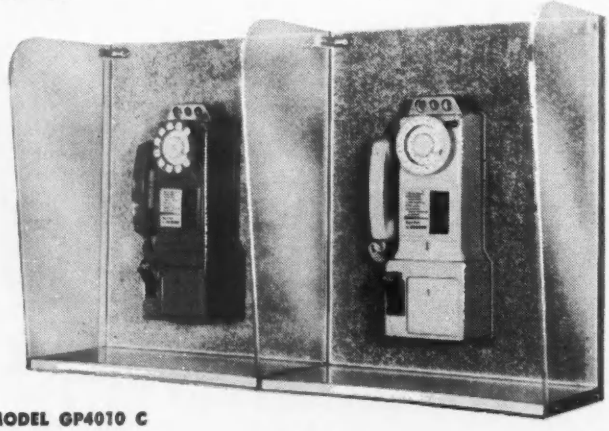
Increase your revenue with modern, attention-getting telephone mountings. Especially designed for hard usage, SHELF-ETTES add prestige and beauty to any locale. Available in a variety of models... in decorator colors. Many Knock-Down units with interchangeable parts. Modern, attractive signs... lighted or non-lighted. Directory shelves are easily attached to SHELF-ETTES. Three basic backboard materials are used: Formica, Perforated plastic, and Carpet. Gladwin's SHELF-ETTE provides the most outstanding public telephone mounting available in the industry.

Model GP4020 — Built in lighted top design. Formica or nylon carpet (Acoustic) covered backboard; Formica covered shelf. **Model GP4010 CP** — Acoustic carpet interior. Shipped knocked down. **Model GP4010 C—List 2**—Nylon carpet (Acoustic) covered backboard (or without backboard); Formica covered shelf. Shipped knocked down.

FOR FURTHER INFORMATION WRITE OR PHONE DEPT. S

GLADWIN PLASTICS, INC.

165 COURTLAND ST., N. E.
ATLANTA 3,
GEORGIA
JA 5-5384



ACOUSTIC MODEL GP4010 C

idle trunk to the PBX. Whenever any item of equipment has an additional feature it costs more money. Since you want to keep the costs down you will want to know how much usage there is on calls for PBX trunks. A plug count of the completing cords in PBX lines will give you a good record of the number of hunting connectors you will require for terminating present PBX traffic. It takes *statistics* to set the foundation.

Next, suppose the traffic engineer is studying the possibility of automatic ticketing. He must find out what volume of traffic goes to dialable points, broken down between all types such as station, person, collect,

You are invited . . . to tell TE&M authors your problems of department policy or procedure on which you'd like to have an opinion.

coin box, etc. He needs to discover how much can be automatically identified, subscriber identified, or operator identified. He needs to know what the savings in operator time will be — and he must make trunk estimates, ticketer estimates, etc. All of these things are based on adequate *statistics*.

For another illustration let's look at the Extended Area Service (EAS) problem. It is the traffic engineer who must know the amount of toll traffic which will be removed, its effect on switchboard positions and toll circuits. This can only be done through satisfactory *statistics* — records of total traffic and records of traffic over the proposed EAS route.

Just having statistics available is only part of the job — the traffic engineer must be able to interpret the figures into properly useful information. To use a simple example — he must know the difference between calls and messages. Calls represent the offered business while messages represent the completed business. Failure to recognize the difference in the historical data would lead to many wrong conclusions on the part of the traffic engineer.

Next time we'll take a look at the traffic engineer as a mathematician and prophet. — *D. A. Perigo.*

"Dealing With The Local Press"

USITA's new booklet, "Dealing With The Local Press," discusses: (1) The importance of good press relations; (2) news and advertising; (3) preparation of the news release; (4) how to handle bad news and controversies; (5) photographs; and (6) model new releases.

"WHY IN THE WORLD is the telephone company demanding *another* rate increase? What they charge now is already exorbitant." One of the telephone company subscribers, let's call him John Henry, had just been listening to a 30-second report on the radio regarding an application for a rate increase by the local telephone company. This was the remark he made to his wife, Mary, expressing his unhappiness with the proposal.

The telephone company had certainly been "missing the boat" in getting information to this subscriber and probably to many more subscribers within the territory. Several things are of concern in such remarks. For example, Mr. Henry states that the telephone company "is demanding" a rate increase. Certainly we do request, but the Public Utilities Commission makes the final determination.

Mr. Henry uses the words "another rate increase." He is really thinking of the fact that the gas company recently applied for a rate increase. Actually, the telephone company hasn't had a rate increase for eight years. Finally, Mr. Henry thinks the rates now being charged are "exorbitant." This indicates that we haven't done a good public relations job in telling him what the service is really worth in terms of today's dollar.

Missing The Boat

ALL OF OUR telephone companies are growing. As we get larger and become more mechanical with our service, we lose contact with our subscribers and the general members of the public. Before we know it, the public's opinion of the telephone company is often not only downright incorrect but also beginning to damage our relationship with the community we serve.

How, then, do we "reach" John and Mary Henry? The answer is — we make good and consistent use of the newspapers in our communities. Nearly every adult in the country is a newspaper reader. Further, what is printed in the newspaper often continues on to radio and television distribution. But, you say, the average telephone manager knows very little about how to make effective usage of the newspaper and thus enhance the reputation of his company. The answer lies in a booklet recently issued by the United States Independent Telephone Association.

Dealing With The Local Press

LEON F. ROBERTS, director of information for the national association, has sent out a booklet entitled, "Dealing With the Local Press." In brief, easily readable language, this 32-page booklet discusses topics like these: *The Importance of Press Relations; Know the Editor; What Is News?; News and Advertising; Give the Facts — Correct in Every Detail; Preparing the News Release; Handling Bad News and Controversies; Handling Photographs; and Sample News Releases.*

Let's take a look at what the booklet says about several of these items.

Importance of Press Relations

THE BOOKLET states that the telephone company exists only with the permission and approval of the public and, therefore, it has a duty to tell the public about the company's policies, what it is doing and what it plans to do. It states the best way to let most people know what the company is accomplishing is through the various methods of mass communication. Healthy press relations must be developed to make it possible for the company to get information to the public and good press relations often will prevent unwarranted editorial criticism of the company.

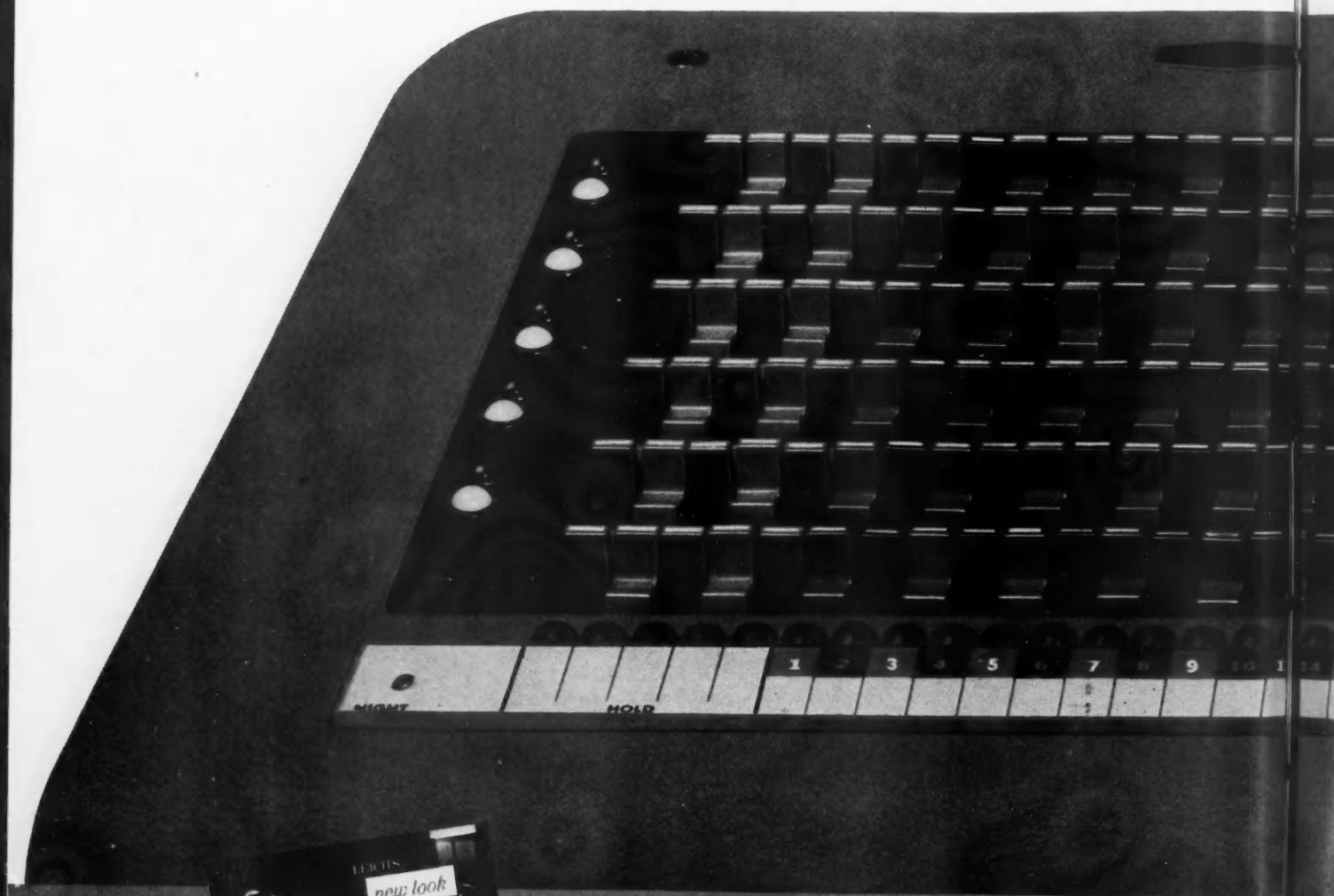
The Editor And What Is News

ONE OF THE most significant suggestions I gleaned from the booklet was its statement that all managers of telephone companies should develop and maintain informal contacts with members of the local press, particularly newspaper editors. If the editor knows the manager personally and has confidence in him, he will be more sympathetic towards the telephone company. Inviting him to have lunch with the manager occasionally and giving him legitimate news of the company from time to time is highly beneficial.

What is news? Since newspapers,

LEICH'S *new look*

The switchboard that sells itself to your subscribers



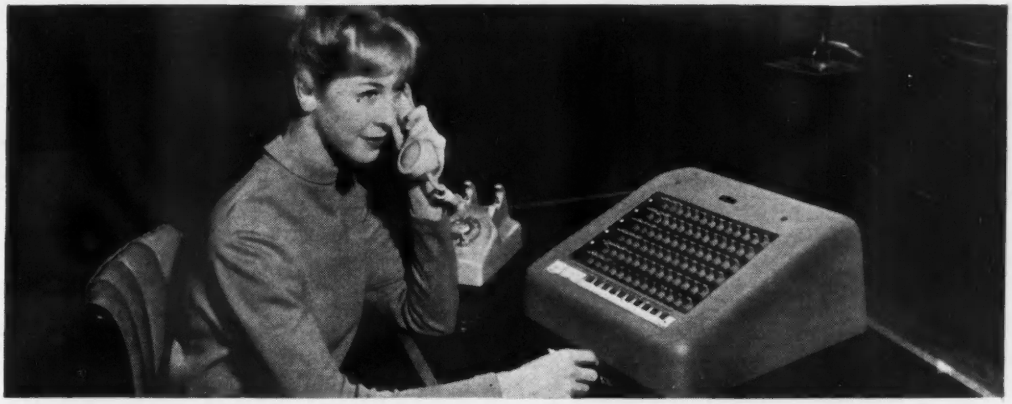
SEND FOR ATTRACTIVE NEW BROCHURE

GENERAL SYSTEM

LEICH

Subsidiary of GENERAL TELEPHONE & ELECTRONIC

CORDLESS PBX



Years-ahead styling makes the Leich PBX a switchboard that sells itself. An amazingly simple keyboard lets an operator handle calls faster and easier than any PBX you've ever seen. And Leich's Cordless gives your subscribers all the service features that they desire most.

On top of these big improvements, you have a PBX switchboard unsurpassed for dependability. Thanks to a simplified arrangement of working parts, costly service calls are kept to an absolute minimum with Leich's Cordless PBX. Improved one-way keys assure dependable service. Here is the switchboard that sells itself — in style, in features, in dependability.

You can offer subscribers excellent delivery because these Leich PBX's are available from stock.

modern, compact, easy to operate

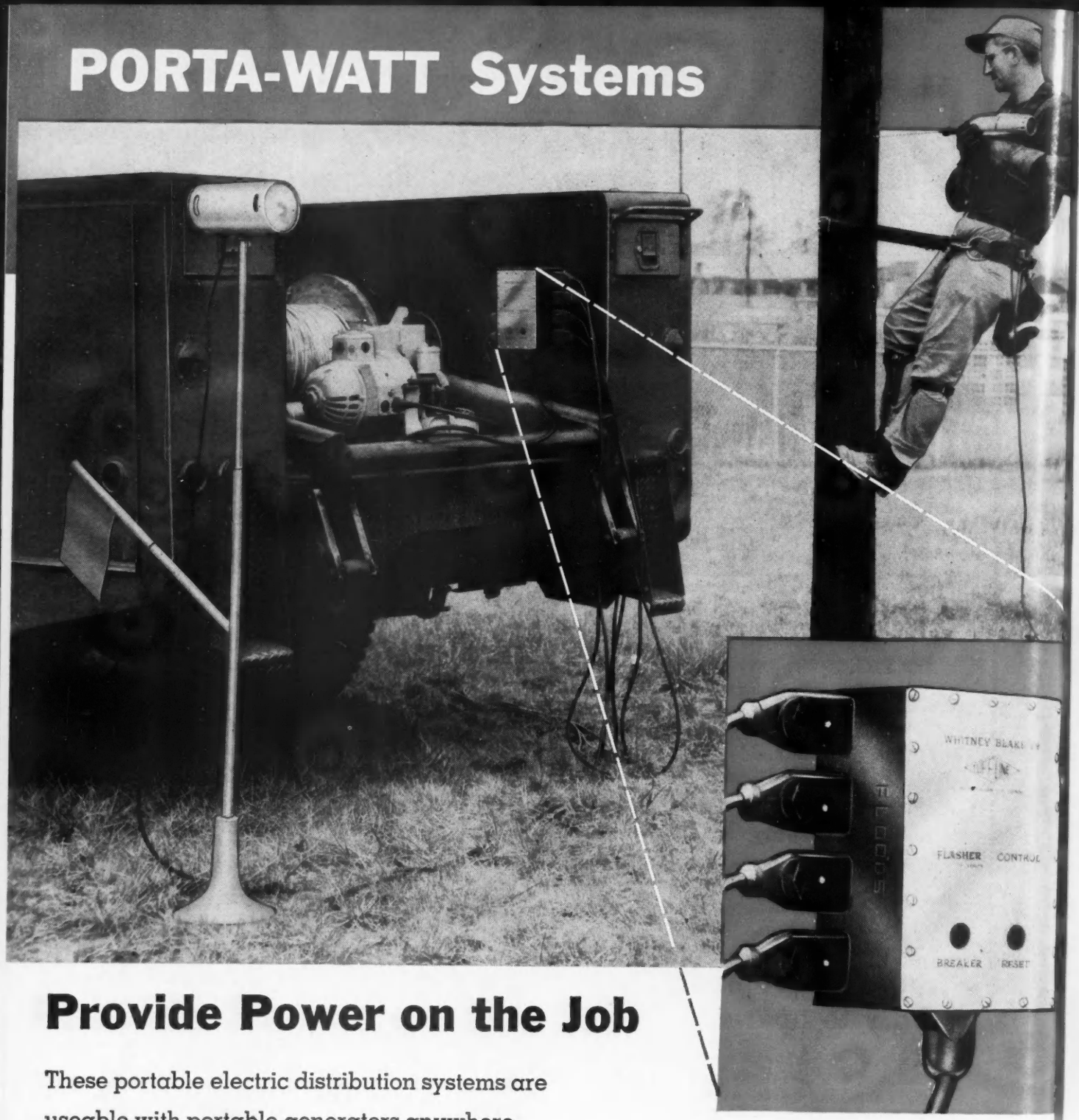
A new approach to styling—neat lines, neutral gray finish, small compact cabinet! What more could subscribers want than this 16½" x 16" x 7½" beauty with all the features of larger, more cumbersome boards. The Leich PBX fits easily on the desk and leaves ample room for other work.

But the key to its sales appeal is a simplicity of operation that makes any office girl a switchboard operator. The ingenious key arrangement makes it simpler to handle all the functions of the board. Visibility of keys is better—even numbered station line keys are beige, odd are black, and trunks are gray.

Each key operates in one position only, eliminating confusion and reducing the chances for error. All of this makes the Leich PBX a real good deal for subscribers—it sells itself.

CH SALES CORPORATION • 427 WEST RANDOLPH STREET • CHICAGO 6, ILLINOIS
IC COAST: 11401 W. PICO BLVD., LOS ANGELES 64, CAL.
EAST: 3651 CONNECTICUT AVENUE, YOUNGSTOWN, OHIO
HWEST: 1227 SLOCUM STREET, DALLAS 7, TEXAS
SOUTHEAST: 5126 SOUTH LOIS ST., TAMPA 11, FLORIDA
anufacturers of telephones, switchboards and related apparatus since 1907

PORTA-WATT Systems



Provide Power on the Job

These portable electric distribution systems are useable with portable generators anywhere. Installation and maintenance crews can be entirely independent of fixed power sources.

FREE — send for descriptive Bulletin TL-3

WB WHITNEY BLAKE CO.

TUFFLINE DIVISION

Note these Features

Easily attached to truck or trailer.
Interrupted and/or steady power.
Molded neoprene components.
DYNAPRENE Cord, yellow or black
Safety engineered.
Completely waterproof
Accessories and extensions available.

NEW HAVEN 14, CONNECTICUT · TELEPHONE CH 4-8515 · TWX NH94

radio and television stations are flooded with daily news releases, most of which are thrown into the waste-paper basket, it is important to know what is "newsworthy." The booklet describes a story as "newsworthy" when it contains one or more of the major ingredients of human interest. This means that we have the makings of a story when a thing, a person or an event is new, novel, amusing, romantic — when it is directly important to a large level of people or plays upon the basic emotions of people.

The booklet describes 40 types of stories that newspapers generally will consider worthy of publication. Just having knowledge of this list is worth reading the booklet. It mentions such types of stories as: New building or building addition; ground breaking ceremonies; retirements; new records set for toll calls handled; and unusual hobbies of telephone people.

Is It News Or Advertising?

THE BOOKLET gives us some real food for thought when it says that there are two ways of informing the public through the press: one by advertising; the other by providing news which a newspaper considers worthy of publication.

It points out that when you buy white space (advertising) in a newspaper, you can use it to say pretty much what you want to say and in the way you want to say it because you sign a copy and thus become responsible for what is said there. But the editorial and news columns of the paper are the newspaper's responsibility. If the wrong kind of statement appears here, the editor or publisher gets the blame. Therefore, it is important that you never give the newspaper copy that will put the newspaper in an embarrassing situation. In summary, the booklet suggests that you be as honest with the press as you are with your customers and yourself.

Here's an interesting comment. The booklet states that whether the company advertises in a newspaper or whether it does not, the company is still a news source and what it is

FREE LITERATURE

Converter Bulletin

A FOUR-PAGE application bulletin describing the use of the Moseley Model 60B Logarithmic Converter as a computing element is now available from the F. L. Moseley Co.

The bulletin explains how the 60B, when used in pairs and with a suitable read-out device, can readily perform multiplication and division. Any read-out device may be used, provided the complete load impedance agrees with the values presented in the application note's diagrams and tables.

The bulletin, AN-101, may be obtained by writing the *F. L. Moseley Co., Dept. TE&M, 409 North Fair Oaks Avenue, Pasadena, California.*

Fastening Tools

A NEW catalog on Ramset powder-actuated fastening tools and accessories has been announced by Ramset Fastening System.

Containing technical data and illustrations, it includes information on working loads. Data on Shure-Set, a hammer-in fastening tool, is also included.

For your copy of the catalog write to *Olin Mathieson Chemical Corp., 460 Park Ave., Dept. TEM, New York 22, N. Y.*

Rechargeable Flashlight Battery Cartridges

DATA sheets from Sonotone Corp. give complete information on new, rechargeable flashlight battery cartridges, Model FC-2 and FC-3. Both models are based on Sonotone's patented sintered-plate, nickel-cadmium battery cells now in use in most U.S. space missiles and jet planes (military and commercial).

The complete charging unit, incorporated with the sealed cells, eliminates external chargers. Either model can be recharged by unscrewing the cap and plugging the cartridge into any 110-120 volt AC outlet. The built-in charger is designed to operate at a 16-hour charging rate, which permits the unit to remain on charge indefinitely without being overcharged.

To obtain complete data, write *Leonard Kane, Sonotone Corp., Dept. TE&M, Elmsford, N. Y.*

Linemen's Equipment

INDUSTRIAL Products Company announces a new four-page bulletin featuring IPCO linemen's equipment and other related safety accessories.

Included are standard utility items as: — IPCO protective canvas bags for linemen's gloves, combination glove and sleeve bags, safety pouches for attachment to linemen's body belts, pole line number plates for aerial inspection of rural transmission lines, clamp-on type danger flags, pole truck flag holders and fluorescent type warning flags.

The bulletin, detailing style numbers, sizes and uses, is available by writing *Industrial Products Company, 3050 N. Fourth Street, Dept. TE&M, Philadelphia 33, Pa.*

Brochure Outlines C. O. Courses Offered by AE Co.

"AE Telephone Training School" is a new brochure which describes the training curriculum offered to operating companies by Automatic Electric Co., Northlake, Ill.

The pocket-size booklet shows how students learn operation and maintenance of central office equipment through theoretical class room study and on-the-job practical training.

Enrollment procedures, and details of the Telephone Central Office Maintenance and Strowger Automatic Toll Ticketing (SATT) courses are also included in the 12-page pamphlet.

Copies may be obtained without cost by writing the *Director of Sales Training, Automatic Electric Sales Corp., Dept. TE&M, Northlake, Ill.*

doing is of interest to the people in the town.

Preparing The News Release

HERE THE booklet gives some most helpful technical information on how to prepare a news release for the press. It lists nine generally accepted rules to use as a guide including suggestions as to what size paper to use, what headings to set up, and, in general, how to do a professional job.

The suggestion is made that if the release is to be submitted to more than one newspaper, an original copy for each editor should be prepared. Finally, verboten is the question to a reporter "Why wasn't my story printed?" Since the company doesn't pay for news stories, it has no right to ask why a story is not used.

Bad News And Controversies

THIS SECTION gave me a new thinking on what I used to consider "bad news." It suggests that we handle bad news to our advantage. For example, in handling news of service interruptions, we should volunteer the information to the newspaper and describe the service interruption in detail and the cause of the trouble. By getting such stories before the public, our customers know the reasons why the service was disrupted. In most cases this creates better understanding of our business than if we attempted to hide the bad news.

This thoughtful point is also made: If the press does not get the story from you, it will undoubtedly get it from some other source which may not be as accurate.

Handling Photographs

IT IS NICE to get a news story about the company into the papers, and it is even better to get a picture in with it. This section of the booklet tells you when you might expect to have to pay the engraving costs for getting a picture for best results and in what form to submit the picture to the newspaper. It suggests a method of identifying the people in the picture and points out that you should not write the names on the back of a picture submitted but use another method in order to facilitate processing by the newspaper.

Sample News Releases

HERE WE have one of the most helpful portions of the booklet. Shown in detail are 16 of the most common types of news releases.

These sample news releases cover all kinds of subjects. One excellent sample relates to the introduction of direct distance dialing. It is a little too long to reproduce here but I suggest that if you are interested in this and other portions of the booklet, you write directly to the Washington office of the United States Independent Telephone Association and ask for a sample of the booklet, "Dealing With the Local Press."

In our next column we'll be talking about paystation slugs. See you then. — *Allan R. Stacey.*

"Not According To Spec"

(Continued from page 28)

one urn. They had been born there the night before, after he cleaned the urn. The guests had enjoyed coffee with real body to it, that day. Nobody seemed much disturbed. One man commented: "It tasted swell, anyway. If they'd only keep the rats out of the flour bins, I wouldn't give a damn about cats in the coffee."

The thought of rats recalls a certain tunnel, and a job where my assistants were unusual. I was installing a P.B.X. for the *British Columbia Telephone Company,* in a big mental hospital. The medical superintendent detailed two or three of the patients to act as helpers. They were first-rate men. As is often the case, they were as sane as anyone else except in certain limited regards about which I was duly warned. For example, if I wanted Napoleon Bonaparte to pull cable through a pipe or sweep the floor, I first addressed him as "Sire," and all was well.

The hospital consisted of two separate buildings, several hundred feet apart. They were linked by an underground conduit or tunnel that carried water pipes, electric wiring and so forth. The tunnel was small in diameter; to run our cable, it was necessary to crawl on all fours. It was hot, dirty and uncomfortable.

One day, *Arthur Balfour,* the other telephone man on the job, started to crawl a few yards into the tunnel to get a measurement. I noticed that he had forgotten his rule, so I asked Mike, one of the helpers, to take it in to him. It was a 6-foot steel rule folding to one foot in length. Mike very sensibly put it between his teeth, as the easiest way to carry it, and started after Arthur. Neither of them reappeared for several minutes. Then Arthur came in from the main entrance. He was covered with dirt and his clothes were torn.

"My God," he gasped, "Do you know what happened? I heard someone behind me and turned my flashlight on him. There was one of those guys after me with a knife in his mouth, so I kept going."

So had the well-meaning helper, all the way through that tunnel! — *To Be Continued.*

FRONT COVER STORY

Officers & Directors of the Wisconsin State Tel. Assoc. (standing, l. to r.): L. J. ROBERTSON, Platteville (pres. elect); PHIL BIGLEY, Viroqua GEORGE F. GRIFFIN, Amery (newly elected director); G. A. RUTENBECK, Milwaukee; HARRIS G. ALLEN, Milton Junction; F. H. SCHAFER, Clintonville; D. H. HANSEN, La Crosse; J. H. HESSELMAN, Mandovi; WM. ROWLAND, Madison (newly elected director); R. G. PETERSON, Wittenberg; ALLAN C. BROWN, Rhinelander; RAY J. RIORDAN, secretary. Seated (l. to r.): TONY M. GOTSTEIN, Casco (newly elected director); H. L. OLSON, Weyauwega; GILBERT A. KARCHER, Burlington; and E. L. BEYL, Osceola. (Convention story will appear in next issue.)

"Modern Cable Construction"

(Continued from page 30)

pends on the speed of trenching equipment. Even in cold weather, the conduit sections can be satisfactorily laid.

The sewer joint cement is a cold-applied plastic bituminous sealer (Pioneer #301) which can be easily applied in winter or summer. It withstands a temperature of -10°F to 300°F without hardening or cracking and does not dry out or skin over.

The inside of the concrete conduit bells is sprayed at the extruding plant with a special primer that prevents moisture from interfering with the effective sealing of the joints.

Experience with the concrete conduit installations indicates that even heavy cable can be pulled into the ducts with relative ease. In one test the amount of tension for an 800 foot section (between manholes) was 2350 pounds. The cable was lubricated in the standard manner. There was severe abrasion or other damage to the cable from this pull. No trouble is experienced in rodding the ducts prior to pulling in the cable.

Further improvements in concrete conduit applications are under study. It is proposed to provide bent sections of conduit for making bends in conduit lines. A two-belled unit is also under consideration for extending a clay conduit run. This particular section would be constructed with square bore at one end gradually changing to a round bore at the other end.

Soapstone Conduit

SOAPSTONE conduit is an old established type of conduit much used for protecting runs of underground telephone cables as well as for other similar applications not related to the telephone field. It has been manufactured for the past 30 years and has been employed to a considerable extent in concrete encased underground duct systems on the West Coast. *Figure* 326 illustrates the

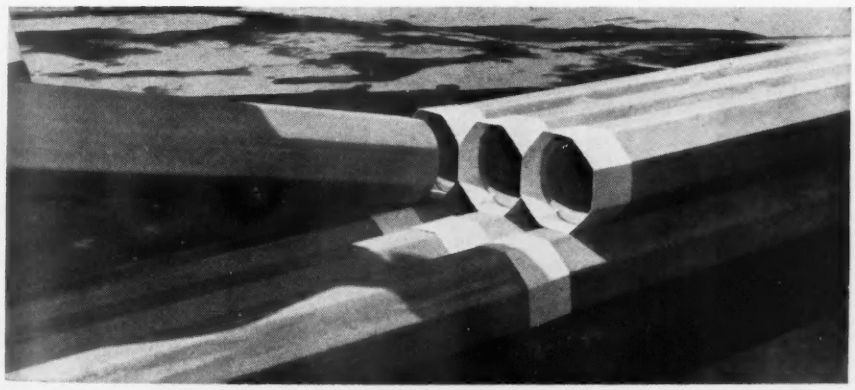


FIGURE 326: — Showing the appearance of "Oct-O-Duct" soapstone conduit. Note collars in ends of conduit lengths. (Soapstone Duct Co.)

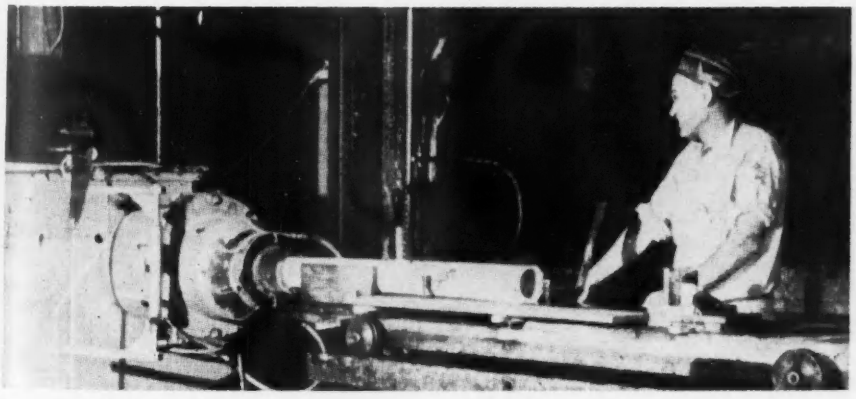
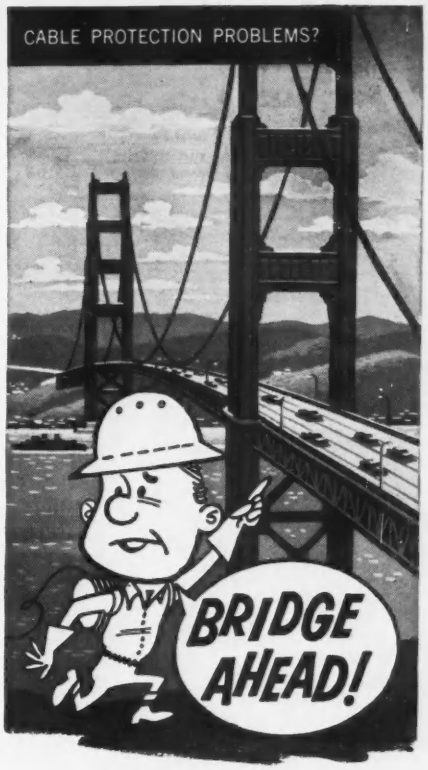


FIGURE 327: — Extruding a length of soapstone conduit.



bring on the

Cablegard®

It pays to keep Cablegard* on hand . . . for there's no faster, lower-cost way to physically protect cable anywhere, above or underground.

Cablegard is a split-pipe sheath that *clamps around* cable. You get the protection of solid-wall pipe, yet you install in minutes—with no special skills needed. And with Cablegard, you can eliminate most cutting and splicing!

You'll be miles and dollars ahead—on every job—with Cablegard. Contact your equipment supply house or write direct to Butler Manufacturing Company for details.

Exclusive clamping tool quickly clamps halves together.

*Patent pending

BUTLER®

BUTLER MANUFACTURING COMPANY
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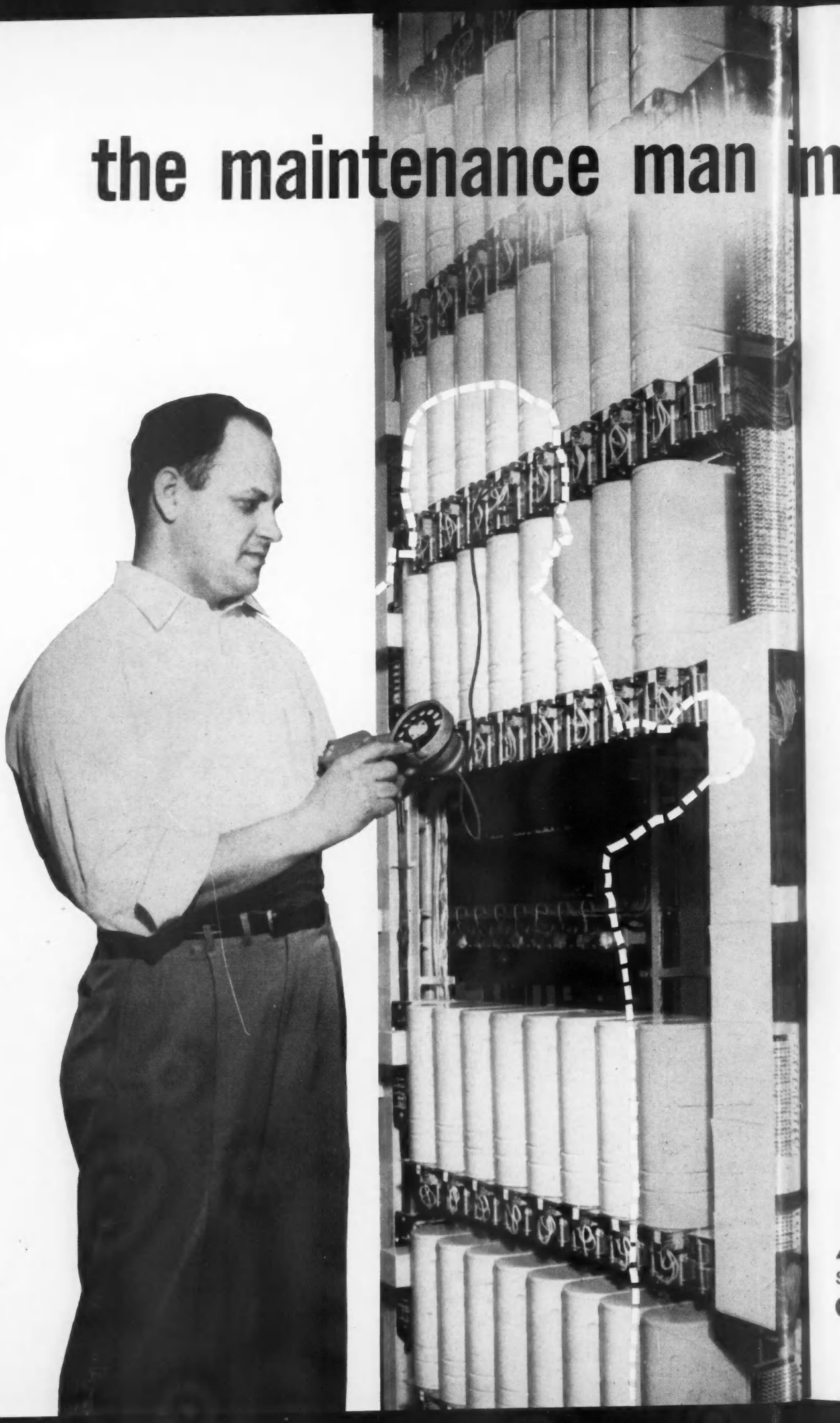
7558 East 13th Street, Kansas City 26, Missouri
Manufacturers of Metal Buildings
Equipment for Farming, Oil Transportation, Outdoor Advertising

the maintenance man i



most out of the picture

THAT'S WHY STROWGER COSTS YOU LESS TO OPERATE!

When purchasing central office equipment, the experienced buyer looks for a product that offers minimum maintenance. That's why so many telephone men choose Strowger Automatic. Let's look at the reasons behind their decision...

simplicity of design. Strowger operates on a step-by-step principle and has the simplest possible construction. This keeps adjustments and repairs to a minimum. The position of the switching components permits visual tracing of circuit operation. This speeds training of personnel and makes trouble-shooting quick and easy.

quality construction. Each Strowger part is manufactured to the closest possible tolerance. Careful control is applied to every component to assure accuracy of adjustment and trouble-free performance. Yes, with Strowger, the maintenance man is almost out of the picture.

FIND OUT FOR YOURSELF! Visit several Strowger exchanges. You'll discover that Strowger offers unsurpassed simplicity in design. You'll also see the craftsmanship and quality construction of this famous equipment. Convince yourself. Then get in touch with us. We'll be glad to help you plan for your dial conversions. Write Automatic Electric Sales Corporation, Northlake, Illinois. Or, call Fillmore 5-7111. In Canada, Automatic Electric Sales (Canada) Ltd., Toronto 16.

AUTOMATIC ELECTRIC GENERAL SYSTEM

Subsidiary of

GENERAL TELEPHONE & ELECTRONICS

CONDEX* MULTIPLE CONCRETE CONDUIT

Special fittings — miters — short lengths — expanded web sections available, also adapters to claytile, transite and fiber duct.

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Col. Concrete Products Co., Div. of Utah Concrete Pipe Co., Denver, Colo. Home Office: Ogden, Utah. Tel: EXport 9-1171
Concrete Conduit Corp., 130-01 Northern Blvd., Corona, N. Y. Tel: ILlinois 7-1515
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Eastern Pre-Cast Corporation, 675 Main St., Tullytown, Pa. Tel: Windsor 9-3750
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J. E. Evans Concrete Products Inc., Shelbyville, Ind. Tel: WAlnut 5-5301
Neff Concrete Products Co., 711 Section St., Danville, Ill. Tel: Danville 1016
PRE-CON Limited, Orenda Rd., Brampton, Ontario, Canada. Tel: HUdson 1-3492 (Toronto)
Pre-Con of Quebec, Ltd., Montreal, Quebec, Canada. .Home Office: Brampton, Ont. Tel: HUdson 1-3942 (Toronto)
T.E.L. Pre-Cast Products Corp., 1 Industrial Ave., Edgewater, Florida. Tel: GArden 8-9881
Utah Concrete Pipe Co., 379—17th St., Ogden, Utah. Tel: EXport 9-1171
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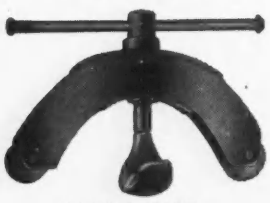
NAPERVILLE, ILLINOIS
NAPERVILLE 2700-2701

GENERAL MACHINE PRODUCTS COMPANY, INC.

Old Lincoln Highway at Pa. Turnpike, Trevose, Pa.

C-R POWER REEL



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appearance of this type of conduit.

This conduit is molded from a mixture of cement, clay and powdered soapstone, compounded to an exact formula and extruded in four-foot lengths in various diameters under great pressure (*Figure* 327). The result is an exceptionally smooth, densely compacted material, with ideal electrical and chemical characteristics. It has adequate mechanical strength to withstand rough handling in the field.

For many years soapstone conduit was manufactured only in the round form, with a complete line of concrete spacers, fittings and adapters. As a result of experience with the round conduit by utility users, the concept of a flat-sided duct was evolved. In 1951, the first flat-sided duct was produced and was standardized in 1953.

The flat-sided conduit has eight sides from which its trade name "Oct-O-Duct" is derived. The new conduit will withstand great pressure before crushing and has been tested for unencased installations with promising results.

The flat-sided conduit is much easier to stack in storage and to erect in the trench than the round type and the spacer problem is eliminated. Where spacings are desired, simple flat concrete blocks serve the purpose between layers and wooden stakes are used to separate rows vertically. These are pulled out before the encasing concrete sets.

The conduit is joined with a simple collar-type coupling. This is made of

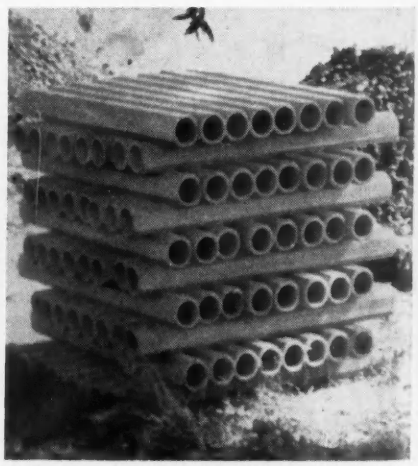

FIGURE 328: — Stacking of lengths of Oct-O-Duct soapstone conduit for a conduit placing job.

FIGURE 329: — Placing Oct-O-Duct conduit in trench. One man is in the trench and one is "top side" to assist the layer.

wax-impregnated paper, and has sufficient strength and moisture resistance to hold the conduit in line and to exclude concrete and other foreign material from the inside of the duct system before and during pouring. The collars are supplied flat, and are easily slipped in place in the field. No tool or special talent is required for this operation.

Standard specifications for straight sections of Oct-O-Duct conduit are as follows:

Inside Diameter	Length	Width Across Flat Sides	Wall Thickness	Weight Per Ft.
2	4 ft.	2 7/8"	7/16"	3.38
2	4 ft.	2 7/8"	7/16"	4.31
3½	4 ft.	4 7/16"	7/16"	5.75
4	4 ft.	5"	1/2"	6.75
5	4 ft.	5"	1/2"	9.25

The soapstone conduit is easily cut with a handsaw to obtain odd lengths to fit in conduit lines. Sharp edges left by the sawing operation may be smoothed with a file.

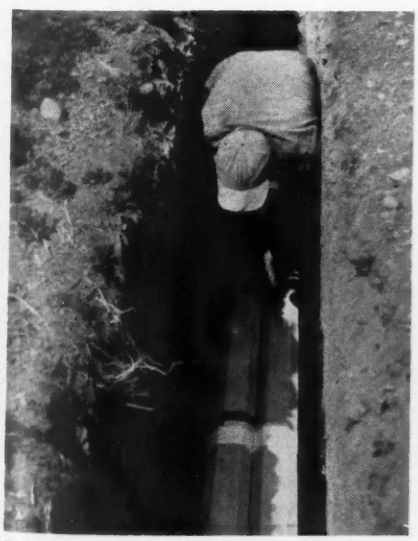

FIGURE 330: — Fitting together lengths of Oct-O-Duct conduit in trench.

Standard bends are available in 90, 45, and 11¼ degrees and may be cut to size in the field to obtain any degree of bend desired. Cast iron adapters are used to join the conduit to other sizes and types of conduit.

The soapstone conduit is easily and rapidly laid in trenches. It is possible to lay as much as 1600 trench feet of 4-way conduit in a single 8 hour shift, with only one man in the trench, and one man outside the trench. Contractors on large cable jobs have consistently been laying over 1000 trench feet of 6-way and 4-way conduit per shift. Four foot lengths of soapstone are easily handled in deep narrow trenches by one man. Under normal conditions one man in the trench can erect systems up to three-high. Above this a second man is generally employed to assist in lining up, tying the structure and placing spacing blocks and pulling stakes as necesary.

Figures 328 to 330 illustrate the laying of the "Oct-O-Duct" soapstone conduit on a typical underground cable job. The smooth bore of the conduit resulting from the presence of soapstone in the material facilitates the pulling of cable into the ducts. — *To Be Continued.*

Mathematical Reference Card

REDI-REFERENCE Card Co. has announced a new mathematical reference card with "Mylar" plastic coating. The first of a series, this card is approximately 3 x 5 inches in size. It condenses mathematical formulas & tables for ready reference.

Tables of three place logarithms of numbers and functions of angles are given together with formulas from algebra; geometry and trigonometry including definitions; special right triangles; law of sines, cosines and tangents & arithematic pogression.

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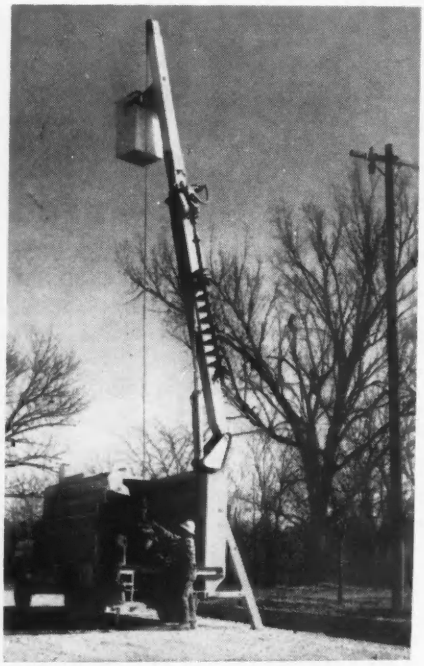
New Products' Showcase

SUPPLIES AND EQUIPMENT

By DICK REYNOLDS

Pitman Polecat

NEWLY developed for telephone construction and maintenance is a three-way unit called the Pitman Polecat, designed for installation on new or in-use line trucks. The unit digs holes, sets poles or transformers, and can be fitted with a fiberglass boom extension and bucket for work aloft. The boom rotates 360° in either direction, and digs holes in a circle from 24 feet to 40 feet in diameter without moving the truck. As a hydraulic derrick, the Polecat is said to load and unload its own truck bed, extend under full load of 8,000 lbs., and reach 32 feet up. Fiberglass boom extension locks into extendible boom-tip, and supports one or two fiberglass buckets for hot-line work. A nonconductive rope runs over the sheave in the end of the fiberglass extension, and lifts transformers and men up to 40 feet above ground.

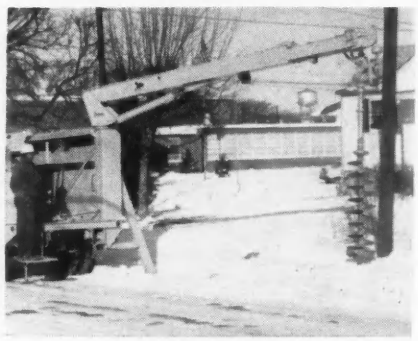


With fiberglass boom extension (white) and bucket, Polecat puts men to work 40′ aloft.

The Pitman Polecat consists of an all-hydraulic boom and outrigger asembly, which can be mounted in either rear corner — or in the center, behind the cab — of most standard, heavy-duty line bodies. The digger is mounted on a sliding sleeve, which is said to transfer instantly from basic boom to extendible tip simply by pulling and replacing a steel pin. The extendible rotating boom spots the digger close to obstructions and keeps holes straight. The same control digs dead-end anchor holes, angling them in any direction. With its digger stowed, the Polecat handles 40- to 60-foot poles. The "stinger" inches in or out to position heavy transformers on poles, too. The boom revolves, raises and extends simultaneously.

Polecat hoisting 40′ pole into hole it has just dug.

The Polecat's extended boom lifts the digger over walls, hedges, ditches and fences. Operator can dig with hydraulic power part way down a steep bank while the truck stays on the shoulder. A telescoping extension, built into the digger shaft, permits digging full-depth holes far below road level. Hydraulic down-pressure on the boom is sufficient to dig through frost, shale or hardpan. "A"-type outriggers extend in a straight line from boom turntable to ground, providing maximum support and preventing racking of sheet metal or body members. Two outriggers are provided on the center-mounted Polecat, one outrigger (for the boom side) and a hydraulic jack (for the offside) on the corner-mounted model. Outriggers are of box-beam construction, with hydraulic cylinders completely enclosed and protected within the telescoping sections.



Polecat, with auger on tip of extendible boom, digs within inches of obstructions.

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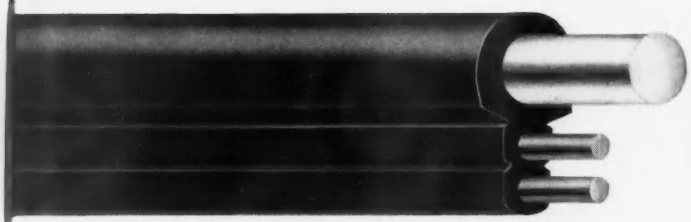

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The Polecat stows for travel in moments: the operator hooks a cable on the auger, turns on the auger's hydraulic motor, and watches it reel itself up into carrying position beside the boom. Then he rotates the boom into traveling position, eases it into a cradle, retracts the outriggers, and he's ready to roll. The stowed boom rides diagonally across the line body, with weight distributed equally on all wheels to prevent uneven tire wear or strain on the truck. The unit has an over-all height of under 11 feet; there are no unusual projections or dangling hoses. Outriggers retract flush with the line body.

The corner-mounted model requires 9″ x 16″ in either rear corner, is designed to fit most line body side compartments. The center-mounted Polecat needs only 24″ behind the cab; in either case, the entire truck bed stays clear for carrying equipment or materials. The all-hydraulic controls are banked in either rear corner. *Check NP* 470.

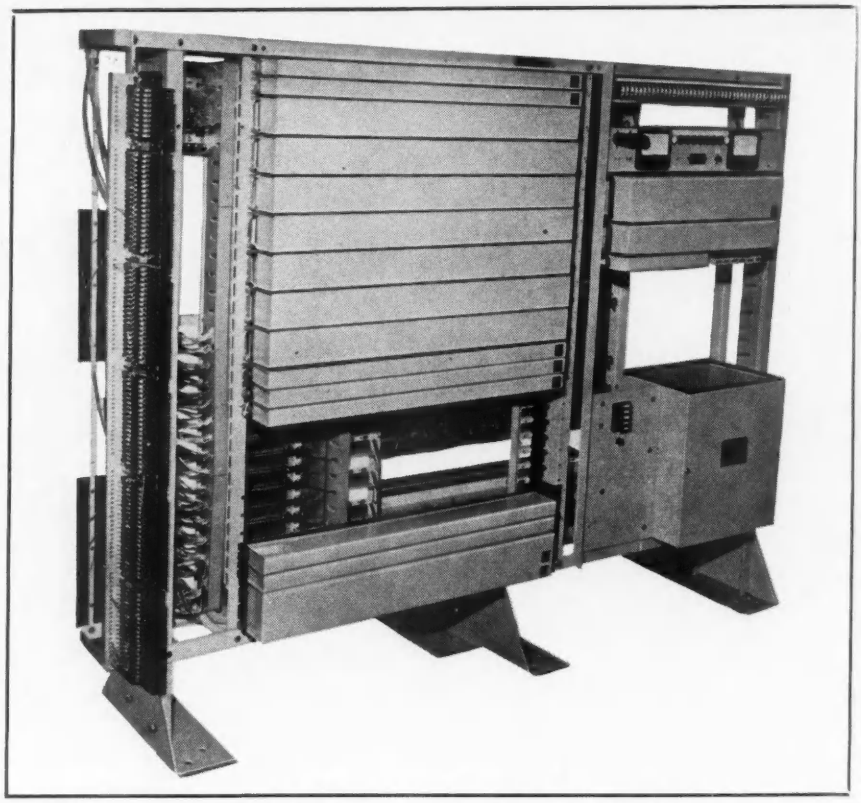
Fiberglass Aerial Bucket

ALSO FROM Pitman Manufacturing Company is an all-hydraulic fiberglass aerial bucket that is said to put men to work, at jobs up to 40 feet high, without exertion or danger. This unit, called the Pitman Pelican, consists of a rotating boom and bucket with dual controls. The entire

telescoping section of the boom, as well as the bucket, is fiberglass for electrical safety and has a capacity of 300 pounds.

An operator steps into the Pelican's bucket with whatever tools he needs for the job. Controls on the bucket's rear lip send him aloft in seconds. The boom revolves 360° in either direction, elevates to 75° above horizontal, and extends to maximum reach in less than a minute. These movements are simultaneous or individual, with the operator in complete control at all times. The lightweight fiberglass bucket levels itself hydraulically as the boom elevates. Dual controls on the truck also control rotation, elevation and extension simultaneously.

The Pelican is available in 28-, 32- and 36-foot sizes, which can be mounted (depending on size) on most ¾ to 1½ ton trucks. This unit is designed for use without outriggers, although torsion bars or spring lock-outs are available as options. The Pelican is said to trim for travel in moments: the operator retracts the boom, rotates it into forward carrying position, and tips the bucket (hydraulically) up into the yoke. Overhead clearance required is under 10 feet. *Check NP* 471.



New C.D.O. Switchboard from Stromberg-Carlson.

C.D.O. Switchboard

THE "XY-COMPAK-I" switchboard, from Stromberg-Carlson, was designed for the company whose station count seemed too low to justify a dial conversion using any type of equipment previously available. The switchboard is a 100-line complete C.D.O., equivalent in operation to the larger systems; it may be equipped in any desired capacity. The unit is carried in stock as a fully-assembled basic unit, universally wired to meet varying local conditions.

The design concept stresses small size — 5′ 2″ high, 7′ long including power panel and MDF, 1′ 6″ wide at the self-supporting base. It is light in weight — basic unit, 530 lbs. crated for shipment; 1360 lbs. in place and equipped to full capacity. The equipment is readily moved and lends itself to temporary installation in a growth area before the eventual "wire center" can be determined.

The unit makes provision for a maximum of 10 trunks (Split — 2 groups) for dial-to-dial or dial-to-manual circuits, featuring the "FLEXI-TRUNK" — a new type of circuit configuration designed by Stromberg-Carlson. The "FLEXI-TRUNK" makes it unnecessary to wait for a second dial tone and eliminates the need for stop-dial equipment previously required on toll trunks. Trunks to connecting offices are reached by dialing a single digit

TELEPHONE ENGINEER & MANAGEMENT'S

PLANT MAN'S 'SPEC' BOOK

(10) Cable Pressurization Procedures — Installing Pressure Plugs, Contactors, and Valves

Installing Dams in Cables 1/4" to 1-7/16" (Plastic Insulated)

Smaller cables between 1/4" to 1-7/16" O.D. can be dammed using a poured resin system with the resin contained in a prefabricated, two-piece mold which snaps around the cable over the opening in the sheath. The method is as follows:

1. Open the sheath at the point where a block is desired. The opening should be large enough to allow for convenient working space but short enough to be covered by the mold size selected. The conductors are bunched or "fluffed up" to allow the resin to penetrate between and around them completely as shown in *Figure* 10.

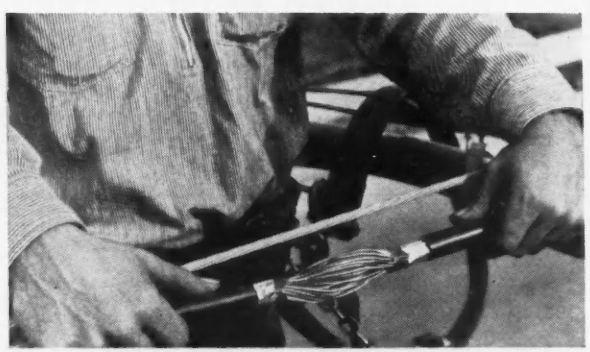


FIGURE 10.

2. The cable shielding is continued through the dam section with pressure sensitive aluminum tape as depicted in *Figure* 11.

3. A two-piece mold (Scotchcast 82-A1, A2 or A3)

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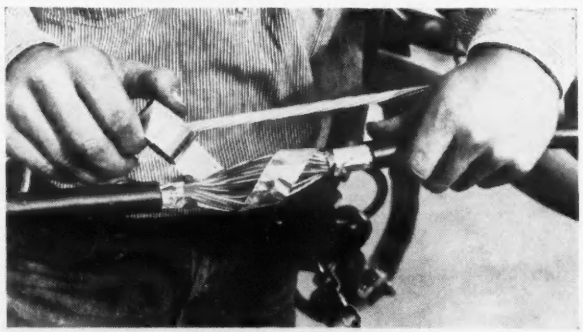

FIGURE 11.

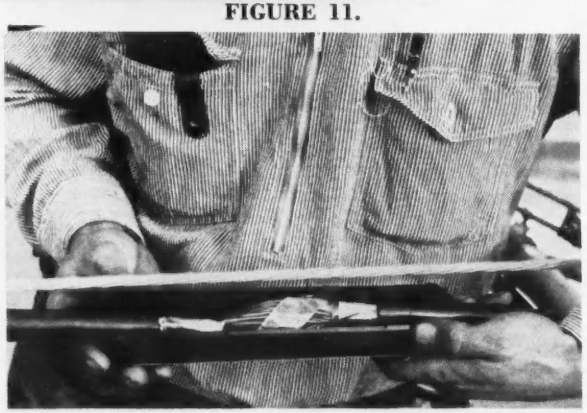

FIGURE 12.

is snapped around the opening and the mold spouts are inserted in the openings provided. *Figure* 12 shows the method.

4. The resin is prepared in its container and one

TELEPHONE ENGINEER & MANAGEMENT'S

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(12) Cable Pressurization Procedures — Installing Pressure Plugs, Contactors, and Valves

FIGURE 13.

corner of the envelope is cut off. The mixed resin is then poured into the mold with the end away from the pouring end held higher to allow air bubbles to escape as illustrated in *Figure* 13.

The "Plant Man's 'Spec' Book" is a regular feature of "Telephone Engineer & Management." We urge all readers to read and file these informative 'Spec' book sheets for future reference.

More Data For Your "Spec Book" in the Next Issue.

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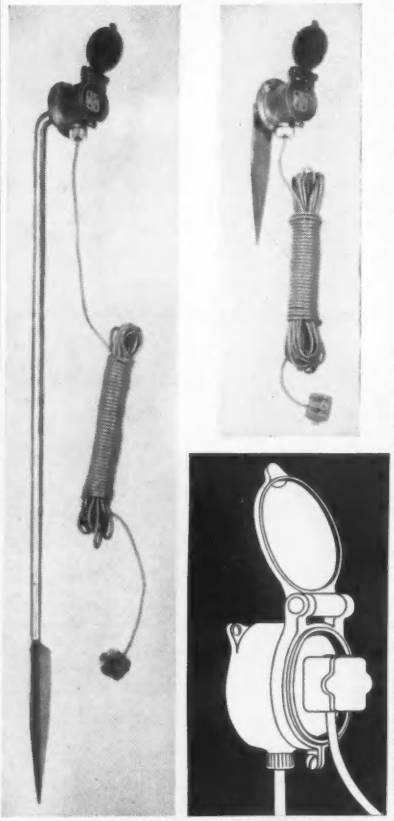

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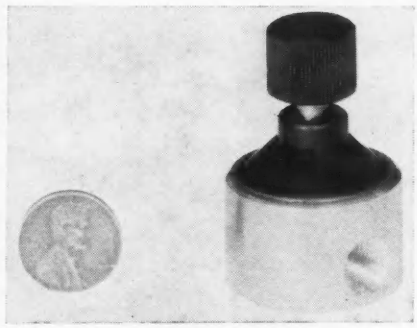
The ringing source is a 5-frequency transistorized ringing machine; since it is D.C. operated, no standby source is necessary. All five outputs are monitored continuously. The built-in MDF has provision for terminating 200 outside cable pairs, offering "A" type protection. Options in jumpering may be taken to comply with local practice. *Check NP* 472.

Packless Valve

A PACKLESS valve designed for service where unfiltered conditions prevail has been announced by the George W. Dahl Co. The "DEMI" GS features a soft diaphragm which is unaffected by particles of dirt trapped against the valve seat.

The resilient diaphragm is able to withstand deformation by trapped impurities while still providing tight

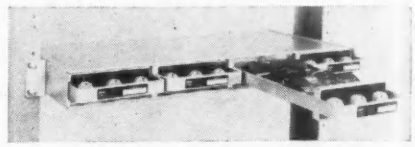


shut-off even during prolonged "closed" intervals. When the valve is opened and the particles are "washed" away, the diaphragm resumes its original configuration.

The valve is rated for 500 PSIG and will close with only 10 inch-pounds of torque at that pressure in dead end service. *Check NP* 473.

Telephone Repeater

THE NEW Budelman Type 251A voice frequency hybrid telephone repeater provides two-way amplification of voice frequencies and was designed for use on trunk and subscriber telephone wire lines. Each of its two amplifiers provides up to 20 db gain. The repeater is equipped with by-pass circuitry to permit d-c or low frequency a-c ringing current to pass around the repeater.



Since it employs transistors, the VF repeater draws only 3.4 milliamperes (0.0034 amperes) from a 12-volt, 24-volt, or a 48-volt central office battery d-c source. Frequency response is flat within ±1 db from 500-3000 cps, down 3 db at 300 cps and 3500 cps. Maximum undistorted output of each amplifier is +2 dbm into a 600-ohm line. When inserted into a standard 600-ohm line, balanced currents are less than 0.2 microampere per longitudinally induced volt of noise in the voice frequency range. The repeater is designed to withstand line surges, being tested at the factory with 1500 volts applied across-the-pair and from pair-to-ground.

Four of the new type 251A repeaters require only 1¾ inches of rack space. A mounting shelf, which accommodates four of the plug-in repeaters, is 1¾ inches high and 19 inches wide and fits standard telephone relay racks. Each repeater measures 4 x 8 x 11½ in. *NP* 474.

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Thornley and Smith Advanced By Kellogg

CHARLES B. THORNLEY has been appointed North Central region manager and J. O. Smith named Southeastern region manager at Kellogg Switchboard & Supply Co.

Charles J. Trees, vice president of marketing, said Smith would replace Thornley in Atlanta, Ga., while the latter would headquarter at the company's Chicago offices.

In his new position, Thornley is responsible for all commercial sales activities of the company in a 10-state area which includes Illinois, Indiana, Ohio, West Virginia, Wisconsin, Minnesota, North Dakota, South Dakota, Montana and Wyoming. The North Central region is one of six established from coast to coast under Kellogg's decentralized program.

Thornley has been with Kellogg since January, 1958, when he became operating manager of the Western region at Burlingame, Calif. He was promoted to manager of the Southeastern region last November.

Smith will direct all commercial sales activities of the company in Alabama, Georgia, Florida, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Virginia. The Southeastern region is one of six established from coast to coast under Kellogg's decentralized program. Smith joined Kellogg eight years ago. He has advanced from salesman through Western region sales manager and division sales manager of the Southeastern region to his present position.

Three New Divisions Announced by Gen. Tel. Dir.

THE GENERAL Telephone Directory Company's President Wesley H. Loomis III and its Vice President-Sales Roland T. Beard announced that full division status was accorded the Honolulu, Hawaii and the Muskegon, Michigan offices on May 1, 1960.

With the addition of Honolulu and Muskegon, the Directory Company, which has its headquarters in Des Plaines, Illinois, now operates thirteen divisions within the United States. Last October, the San Fran-

be prepared

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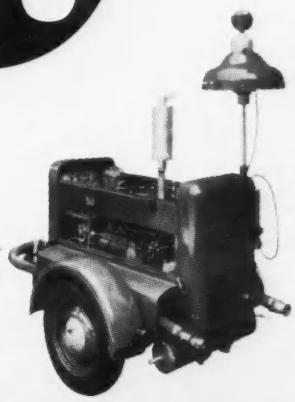

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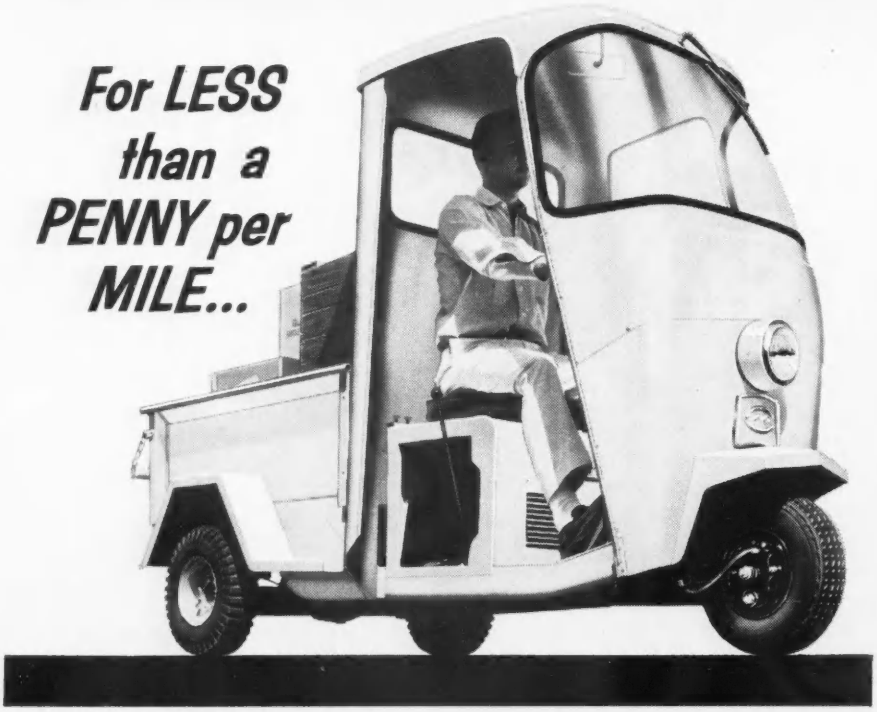

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cisco operation was severed from the Long Beach, California Division and elevated to a division.

Honolulu, too, was formerly a part of the Long Beach Division. The operation in Honolulu will be guided by Calvin "Cal" Breeding, who was

CALVIN BREEDING

promoted from assistant division manager to division manager. Breeding has been associated with the company for nine years serving with the Long Beach Division in various sales and managerial roles.

Opened as a sales office on March 14th of this year, Musegon was part of the Directory Company's Ft. Wayne, Indiana Division. Assistant Division Manager Lester J. "Les" Barton, who was in the Ft. Wayne Division, will have charge of the new

LESTER J. BARTON

Muskegon Division. Prior to establishing the Muskegon Division, Barton was assistant mgr., Ft. Wayne Division and was located in Muskegon.

International Subsidiary Formed By GT&E

GENERAL TELEPHONE & Electronics Corp. has announced the formation of an international subsidiary, General Telephone & Electronics International Inc., which will have overall responsibility for all GT&E manufacturing, marketing, and engineering operations outside the United States.

In the announcement, Donald C. Power, chairman and chief executive officer of GT&E, said that "integrating all of our international manufacturing, marketing, and engineering operations under the new subsidiary not only will assure the continued growth of our present extensive activities abroad, but also will enable us to realize fully the steadily expanding potentials for our products in markets throughout the world."

Power announced that Gene K. Beare will be president of GT&E International, and will also have overall responsibility for the operations of Automatic Electric International, Inc., and its international subsidiaries.

The organizations which will be transferred to General Telephone & Electronics International include the present international operations of Sylvania Electric Products Inc. and Lenkurt Electric Co., Inc. These organizations, together with Automatic Electric International, Inc., produce a wide range of products in the communications, electronics, and electrical fields, with subsidiary manufacturing facilities in Canada, Italy, Belgium, Argentina, Brazil, and Mexico. Associated manufacturing companies are located in Great Britain, Italy, Japan, and Mexico. More than 80 international sales offices, agents, and distributors for Automatic Electric and Lenkurt products are located in 68 countries and territories throughout the world. A total of 125 Sylvania international sales offices,

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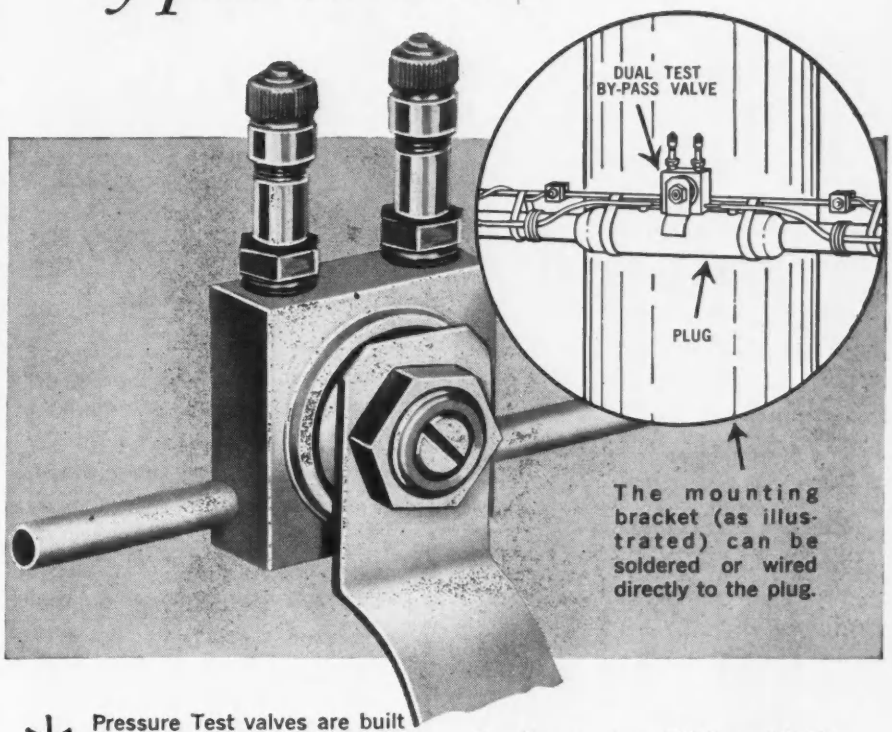

- Pressure Test valves are built into the By-pass Valve. Safer and more efficient than reaching or moving ladder to make pressure tests.
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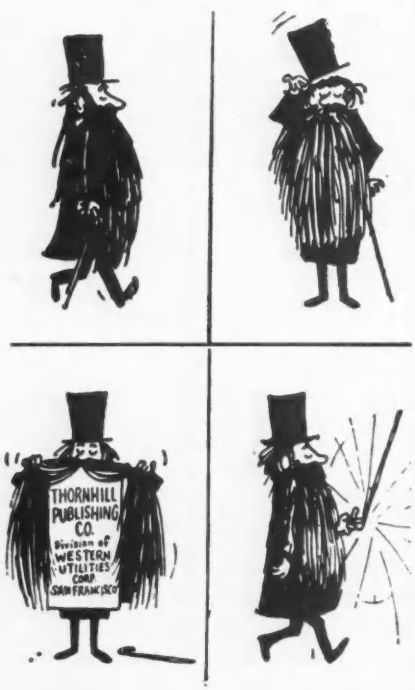

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agents, and distributors are located in 77 countries and territories.

In addition to manufacturing, marketing, and engineering operations outside the United States, GT&E International also has responsibility for the marketing abroad of products made in the U. S. by all of the GT&E domestic manufacturing subsidiaries. These manufacturing subsidiaries include Leich Electric Co. and Electronic Secretary Industries, Inc., as well as Automatic Electric, Sylvania, and Lenkurt.

GENE K. BEARE

JAMES G. JOHNSON

Area headquarters of GT&E International will be located in Geneva, Switzerland, covering Europe and the Middle East, and in Mexico City, covering Mexico and Central America. Additional headquarters are planned in other major areas.

Johnson Appointed Electrowriter Sales Manager

JAMES G. Johnson, formerly assistant sales manager of Comptometer's Business Machines Division, has been appointed general sales manager of Electrowriter System Sales, according to J. A. Schram, president of Comptometer Corp.

As sales manager, Johnson is responsible for a national sales and advertising program for Electrowriter Systems. Electrowriter instruments, manufactured by Comptometer's Communications and Electronics Division, transmit and receive written messages instantaneously any distance.

Johnson became a sales representative for Comptometer® Calculating Machines in 1946. Six years of selling business machines won him the position of district sales manager of Comptometer's Cleveland office. He was active in office management organizations in Cleveland and Milwaukee, and a member of the National Association of Accountants. In 1955, Johnson was appointed Midwest Regional sales manager and in 1957 assumed the duties of assistant sales manager of the Business Machines Division. In this position, he assisted General Sales Manager L. T. Carr in directing sales of Comptometer Calculators, listing-adding machines, automatic printing multipliers, dictation/transcription machines, and data equipment.

In his new capacity as Electrowriter sales manager, Johnson will direct sales efforts from Comptometer's new general offices and plant at 5600 Jarvis Avenue, Chicago.

Ken-Tron Corp. Appoints West Coast Representative

THE KEN-TRON Corporation, Lynn, Mass., has appointed the Logan Sales Co., San Francisco, Calif., as its technical representative for all products in northern California and Nevada. The appointment was made by Ken-Tron marketing director, Bill Frazier. Ken-Tron manufactures complete lines of RF connectors and telephone plugs and jacks for both military and industrial use.

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DESIRE to relocate. Have degree in Business Administration. Experienced in management, construction, maintenance and Dial C. O. Installation. Write Box 120, c/o Telephone Engineer and Management, 7720 N. Sheridan Rd., Chicago, Ill.

POSITION WANTED

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MANAGEMENT, staff or traffic engineering position desired with operating telephone company, consulting firm, manufacturer or regulatory body. Age 47. Over 28 years telephone experience with large operating company, primarily in traffic. Complete resume upon request. Box No. 123, c/o TE&M, 7720 N. Sheridan Rd., Chicago, Ill.

WESTERN Electric Supervisor desires technical position with progressive Independent Telephone Company as Manager, Estimator, Maintenance or Installation Supervisor of COE and Engineer. Thirty-five years experience dial, toll. Box 124 c/o TEM, 7720 Sheridan Rd., Chicago, Ill.

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7 — Service Assistant Chairs, 33" high, 12 — Time Card Racks, 25 Card Capacity. Write or phone Traffic Manager, Inter-County Tel. & Tel. Co., Fort Myers, Fla.

TELEPHONES: Western Electric 302 (251) with 5H Dials, completely reconditioned, neoprene cords, metropolitan plates, new finger wheels and other necessary parts. Ringer frequency S.L., 30, 42, 54 & 66. Satisfaction guaranteed. $7.00 each. Quattlebaum Telephone Supply Co., Bonifay, Fla.

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(Continued from page 65)

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WEST VIRGINIA Tel. Assoc., Morgan Hotel, Morgantown, W. Va., Sept. 19-21.

NEVADA Tel. Assoc., Hotel Nevada, Ely, Nevada, Sept. 21, 22, 23.

NEW ENGLAND Tel. Assoc., Mt. Washington Hotel, Bretton Woods, N. H., Sept. 25-28.

NORTH CAROLINA Tel. Association, Carolina Hotel, Pinehurst, N. C., Oct. 3-4.

NATIONAL CONVENTION, Conrad Hilton Hotel, Chicago, Ill., Oct. 9-12.

SOUTH CAROLINA Tel. Association, Clemson House, Clemson, S. C., Oct. 24-25.

VIRGINIA Tel. Association, Roanoke Hotel, Roanoke, Va., Oct. 27-28.

GEORGIA Tel. Assoc., Biltmore Hotel, Atlanta Ga., Nov. 9-10.

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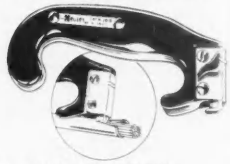

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3-045 .. Per C	2.00
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Wyoming Valley Equipment Div. 65

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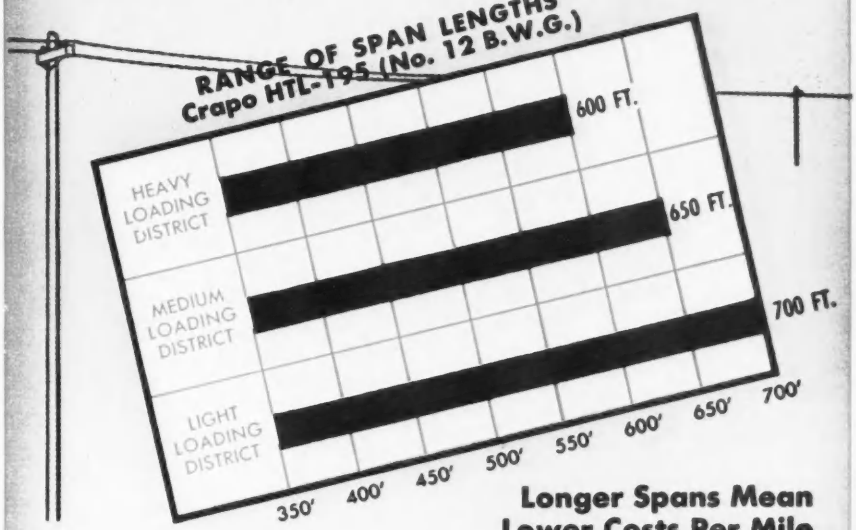
HTL-195

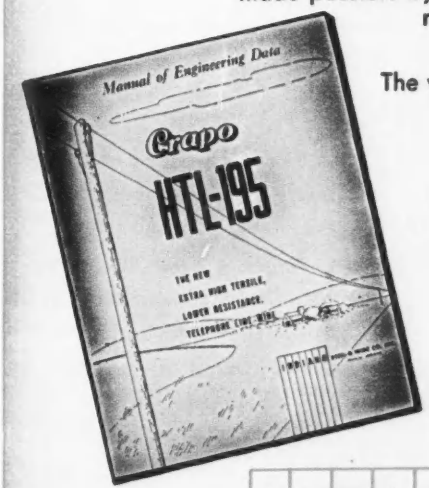
FOR EXTRA LONG SPAN RURAL LINES

The *NEW LOWER* Resistance Extra-High Tensile Line Wire



Longer Spans Mean Lower Costs Per Mile

You can cut the number of pole structures to a minimum when you use *Crapo* HTL-195 in building rural telephone lines. Extra long span construction, made possible by the high physical strength of this new wire, means marked savings in material and installation costs.



The voice transmission quality of *Crapo* HTL-195 is equal to that of *Crapo* HTL-135 and superior to older grades of ferrous wire.

Pertinent technical data have been prepared to assist engineers in designing and building extra long span lines with *Crapo* HTL-195.

WRITE TODAY for FREE COPY of the CRAPO HTL-195 "Manual of Engineering Data" No. A-195

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. . . and that's no joke where phone cord serviceability is concerned.

Maximum stretch and positive retractability mean carefree installations over the years when you select COMCO Spiraflex Cords for your handsets. Quality-built inside and tough-jacketed with rugged P.V.C. in your choice of ten decorator colors or black, they are perfect for any type service, any surroundings! Available in standard or extra lengths (10, 15 and 25 feet). But, see for yourself by putting a sample cord on your own phone. Prompt delivery assured!

Call COMCO for all your cord requirements

Popular Spiraflex is only one of the complete quality cord line COMCO is ready to supply. In addition, there are Nylon Jacketed Switchboard cords in four colors and operator cords in black or brown, plus black or colored P.V.C. jacketed receiver and deskstand cords, patch cords, transmitter cords, test cords, extra length cords and cords for inter-communication systems . . . all can be yours from COMCO.

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THE BACK OF THE BOOK

By JOHN G. REYNOLDS

"Humble Pie"

THE BEST treatment for the disease known as "geographyitis" is a healthy dose of humble pie, and last month Lem Tate, office manager for Illinois Bell Telephone, announced that he is eating his square of the pie with other officials of the company who realized the new telephone directory for Glencoe, Kenilworth, Northfield, Winnetka, and Wilmette, Ill. carries an error on its colorful cover.

The artist who drew the map of the North Shore for the new directory cover placed Kenilworth north of Winnetka, a surprise to residents of the small village which has been nestled between Wilmette and Winnetka for many years.

Company officials expressed regret at the error which was not discovered until the directories were printed and ready for delivery. They are scheduled to be delivered with the misplaced villages on the cover, according to Mr. Tate, who added, "I can understand a mistake like this; come to think about it, I wasn't too good in geography at school myself."

Chatty Teen

IN FRESNO, Calif., a year-long mystery has been solved by phone sleuths who finally located a teen-ager who, unknown to her mother, ran up a phone bill of $1,642 during the Christmas holidays when she made 462 long distance calls from her home in Fresno to Los Angeles.

The 13 year old girl made as many as 20 calls a day for as much as $35 each. Most were made to school chums. She called one friend 123 times. . . . To top everything, she charged them indiscriminately to other subscribers.

When they complained about their bills, it took the phone company nearly a year to trace the calls to the chatty teen-ager.

Her mother couldn't pay the bill but took precautions for the future by padlocking the phone.

"Stoppers"

TELEPHONE friend of ours is a collector of stories dealing with perfectly-correct answers which only bewilder those doing the asking. Here are two examples:

(1) When a Knoxville, Tenn., physician was called to the new Fort Sanders Presbyterian Hospital for the first time, he had to ask how to get there. Getting out, however, was even a bigger problem.

Lost in a maze of corridors, he finally asked a student nurse: "How do I get outside?"

Pleasantly, she answered, "Just dial 9."

(2) When a Huntsville, Texas operator asked a long distance caller for the number of the party she was calling at the state prison, she received this indignant reply: "He doesn't have a number. He's the warden there."

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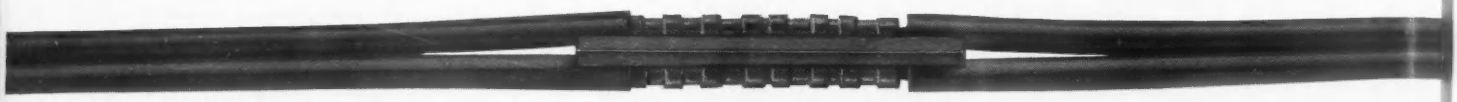
Shortest way to Short-proof splices...



Nicopress Splice Separators...

Ideal combination for full-strength, short-proof splices in parallel and twisted-pair wires... Nicopress Sleeves and Nicopress Splice Separators.

Nicopress Splice Separators save time, save tape, eliminate need for staggering splices, provide neater splices, eliminate shorts. Linemen readily make full-strength equal-tension splices in both parallel and twisted-pair conductors with Nicopress Sleeves and Tools, then merely snap the high-dielectric Nicopress Separator between the two splices. Tape is easy to apply over the insulated splices.

Nicopress Splice Separators are available in two sizes... 3456-B for both parallel and twisted-pair drop wire, and 3457-CD for rural distribution wire.

The National Telephone Supply Company

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